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"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again."—SHERMAN.

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ARTILLERY ORGANIZATION.

BY JAMES CHESTER, MAJOR OF ARTILLERY, RETIRED.

IT is the privilege of every citizen to criticise the laws and the lawmakers. It may do no good, but it hurts nobody, and it is a great relief to the critic. Moreover, it is believed to be the salt which saves the government of a free people from corruption. But while it is the privilege of all, it is also the duty of some. Of course, the party in opposition ought to criticise and correct, as far as lies within its power, every infant project of law from its birth to its maturity, so that it may be in as perfect form as possible when it steps into the statute book. But apart from politics, professional men, when laws affecting their professions are under discussion, and even after they are passed, should not hesitate to criticise or recommend whenever the interests of their profession demand it. Such criticisms may not be immediately effective, but they are seed sown, and a harvest at some later period is, at least, a possibility.

The criticism and corrections of projects of law are not easy operations for the party in opposition, especially when purely professional or technical subjects are being dealt with. In such cases legislators depend for information on outside and often interested parties, who see the subject from personal points of view. In military matters unanimity of opinion can be obtained

only by selecting witnesses from the same grade in the hierarchy, that is, from men who see the subject from the same point of view. When this limit is passed, conflicting opinions are encountered. As a rule, experts can be found in any profession, able, honestly enough, no doubt, to give the most antagonistic opinions, and army officers are no exception to the rule. When legislators say, "The army does not know what it wants," they simply state the truth. Still a careful study of the opinions of its various grades will generally disclose to unbiased investigators the real defects, if there be any, and the true remedies, if any be required. That investigators into military requirements are sometimes bewildered by conflicting opinions is not to be wondered at. That they ever get a clear idea of any military subject is surprising.

The generation of a law is a complicated process. The concoction of the Bill for an Act is easy enough. Its introduction and pilotage through the tortuous channels of legislation may be tedious and trying to the temper; but if the bill is an honest one, and the foundation of facts upon which it rests shows that it is necessary, that it proposes a real remedy for a real evil, it cannot be very difficult. The most difficult parts of the process antedate the drafting of the bill. An alleged evil or defect must be established to the satisfaction of some one in executive authority, as a preliminary. It then becomes his duty to make recommendations to the legislative department of government. His diagnosis of the evil is the first and most important step in the direction of a remedy. If the diagnosis is false, the remedy recommended must be false also, or unnecessary. Everything depends upon the diagnosis. It should, therefore, rest upon sufficient evidence; not the opinions of a few superior officers only, but of every class of officers who may, in the line of duty, come into daily contact with the subject.

There are three questions which should be determined to the satisfaction of the investigator before any recommendations are made, namely:

1. Does the alleged evil actually exist?
2. What is the nature of the evil, and the cause of its existence?

3. What should the remedy be?

In the matter of artillery reorganization these questions have doubtless been asked and answered to the satisfaction of the proper authority. He has diagnosed the case and made his recommendations. The recommendations were in the form of a Bill for an Act. That bill has been towed over the regular course. It has been denounced, defended, amended, mutilated and maltreated in various ways, and finally passed. It has been through the mill, and, in a somewhat emasculated condition, has reached the statute book. And the questions now are: Was the diagnosis correct? and does the law remedy the evils established in the diagnosis?

Taking up these questions in order, one cannot help asking as a preliminary, was there anything wrong with the old Artillery Organization?

With the experiences of our Civil War still fresh in one's memory, he can answer without hesitation, There was. Of course the Civil War is rather ancient history, and young men may turn up their noses at its teachings. But principles never change. They are to-day exactly what they were in the days of Napoleon. And facts never change their character. Age is no disqualification for them. So the Civil War is still a good witness in matters military. Of course the experiences of the Civil War do not stand alone on this question. There are other facts which teach the same lesson. But in speaking from experience one likes to take up the evidence in the order of time.

It is a notorious fact that the necessities of the Civil War practically suspended the regimental organization of the artillery. Of course, there were no orders issued on the subject. The organization, without any orders, quietly sank out of sight, and another organization was almost as quietly installed in its place. The old one was still legal, and maintained its position on paper throughout the war; but as a factor in the war it had no existence except as an annoyance.

The regiment of artillery to which the writer belonged had no commander during the Civil War. Its headquarters, so called, were established at a Northern post, from which the adjutant, who signed himself "In charge of Records," was contin-

ually calling for Returns, the originals of which had been on file in the War Department for months.

As there was no regimental commander of the Third Artillery during the Civil War, the functions of that officer were in abeyance for four years without any great inconvenience to the regiment or any detriment to the service. If the organization itself had also been suspended the consequences would have been *nil*, and officers would have been freed from the irritating efforts of the adjutant to keep up the Records of the regiment.

Now, the irritating efforts of the adjutant may be considered a small matter. Making out an extra copy of certain Returns and Reports for Regimental headquarters may be considered a small missile to launch against a time-honored organization. But it was not so insignificant as it looks. When office accommodation is reduced to a cracker-box and the tail-gate of a wagon in the open out of doors, the insignificance vanishes. Moreover, a man is not in first-class form for clerical work after a long day's marching or fighting.

But it was not the inconvenience alone that constituted the grievance. Uselessness overshadowed inconvenience. The conviction that his clerical work served no necessary purpose; imparted no new information; recorded no facts except those already recorded; and was addressed to an officer who had no actual existence, multiplied the irksomeness a hundred fold.

Such experiences show that regimental organization in the artillery falls to pieces of itself whenever war breaks out on a large scale. And the argument from such experiences is, that such an organization is a hindrance rather than a help to efficiency, and therefore not worth preserving.

At the close of the Civil War colonels of artillery rejoined their regiments. They had mostly served as general officers under volunteer commissions during the war, and were, in a measure, strangers to their own arm of the service when they returned. The artillery had not been marking time during the war. It had not advanced by leaps and bounds, as it has done since, but it had moved and was still in motion. This may not have been altogether overlooked by the returning veterans, but when a man, who has commanded a corps or a division comes down to the command of a regiment or perhaps a two company

post, he is apt to feel as the hungry man did after eating a good dinner, namely, that he never would be hungry again. The veterans felt that they would never have to do battle again, and so contentedly dropped into the old rut from which the war had extricated them.

The garrison of a sea-coast fort became again an infantry battalion with an artillery side show. It was always paraded as infantry, reviewed as infantry, and inspected as infantry. Reports of Inspectors General as to the efficiency of artillery post commanders, were based principally upon the appearance and proficiency of their garrisons as infantry troops. Naturally, therefore, Post Commanders devoted most of their time to infantry training. Small-arm practice was considered more important than artillery practice. It took a long time to open even artillery eyes to the absurdity of this idea. Their specialty was to shoot with sea-coast cannon. To fire the biggest of them once costs several hundred dollars. To throw such shot away in war times might be ruinous. Still it was, and is, considered economy to limit artillery practice. The cost of such practice is, of course, very considerable, and when it is expended in trying to make men artillery marksmen with all kinds of cannon, it is practically thrown away. If a bandmaster insisted upon practicing his musicians with every instrument in his outfit, the result would be unsatisfactory. Still the difference between the manipulation of a clarinet and a trombone is hardly any greater than that between the service of a 12" B. L. Rifle and a field mortar, and it is not wise to expect any better results. The jack-of-all-trades method must be abandoned if proficiency is to be attained.

Conservatism is the millstone which has been hanging on the artillery neck. There are, of course, other causes for the unsatisfactory condition of things in the artillery, but conservatism is the most difficult to get rid of. "It has always been so," is a sufficient reason for many absurdities in that corps. There is nothing surprising in this, or perhaps one should say, there was nothing surprising in it for, say, one decade after the Civil War. As already said superior officers of artillery returned to their regiments with very old-fashioned ideas about guns and gunnery, and the younger officers, whose service had been exclu-

sively with field artillery, were equally ignorant about the armament of sea-coast forts. As a matter of fact, sea-coast service was at first, and for some time, distasteful to them. The cast-iron monsters with which our sea-coast forts were garnished, did not seem to call for much brain work, and there were no opportunities for dash and daring in their service. Their service was largely a matter of muscle, and their conservation a matter of paint and coal tar. Under such circumstances the old artillery rut was easy to enter. No wonder, then, that old and young were so easily entrapped.

But in course of time the Artillery School was reorganized and the science and art of artillery were discovered. Moreover, inventive minds, during and since the war, had been turned in the direction of artillery material, and wonderful guns and machines, and artillery appliances came crowding to the front. New, powerful and dangerous explosives were invented and handed over to the artillery for use; steam and electricity were enlisted into the artillery service; instruments of rather a complicated character came into general use; and artillery officers, old and young, discovered that an artillery command was not altogether a sinecure.

There was a general waking up. Artillery officers had not only to understand all about the new material, but also to teach their men its manipulation and use. The old artillery rut might have been wholly abandoned, but conservatism forbade. Intellectual work, artillery work, special work, had to be done if efficiency was to be attained, and artillery officers, with one foot in the old rut and the other out of it, tackled the business with enthusiasm.

But they had the old millstone about their necks. They soon discovered that every soldier could not learn everything, but it was some time before the necessity for recognizing specialties dawned upon them. They struggled hard in spite of the old millstone, trying to teach ballistic formulas to men who had no idea of the nature of a decimal. A course in gunnery was mapped out, and the men that mastered it were to be called "Gunnerymen." Examinations were instituted, and doubtless much good was accomplished. But officers of discernment were conscious that the thing was a failure. "The Gunner," after all,

was but a poor Jack-of-all-trades. If good results were to be attained the men must be taught and trained in specialties. Batteries, or as they are now called, companies, must be broken up into detachments for this purpose, and suitability must determine assignments.

Gunners must be trained as artillery marksmen with some particular gun; cannoneers must be trained in the service of a particular piece of artillery. The magazine and Filling Room staff must be trained in their specialty. So must the range and position finders; the search-light managers; the submarine mine managers; the telegraphers; the locators and relocators; and every other distinct speciality in the service of any particular gun. The Jack-of-all-trades in modern artillery is out of date. The specialist is a necessity.

The training of a company of sea-coast artillery assigned to the service of a battery of sea-coast guns has resolved itself into the training of many separate detachments in many distinct specialties, and presents a problem of some difficulty. This difficulty arises chiefly from the fact that specialties are not yet universally recognized in the artillery. The old millstone still holds a few officers in the old rut. Infantry parades, infantry drills, infantry inspections, and Jack-of-all-trades training still have advocates and defenders in the artillery corps, and probably will continue to have for another generation. West Point training has much to do with it. The corps of cadets is an infantry battalion, with cavalry and artillery attachments. It is natural, therefore, that graduates should carry that idea with them into the arm of the service to which they are assigned. The absence of muskets in the cavalry and horse and field artillery makes it difficult to apply the idea to these arms of the service. But it is a ruling idea, and will probably never be got rid of in sea-coast artillery.

Still the sea-coast artillery has made great progress. Infantry work has become less important in artillery garrisons than it used to be, and although the doctrine of specialties has not yet been generally recognized, the tendency of the times is in that direction. The enthusiasm of artillery officers in their enlarged field of activity has been very great, and valuable results have been attained in many cases. But there has been great absence

of uniformity in methods as well as in results. The regimental organization was largely to blame for this. Without a responsible head, uniformity could hardly be expected.

There were seven centres of energy in the artillery, each of them equally powerful and independent. If any two of them adopted similar systems of training, it was purely accidental. As a rule the seven independent heads produced seven independent systems, not necessarily bad systems, but different. Uniformity was desirable, and under the regimental organization uniformity was impossible. This then, and the experience of the Civil War are the principal objections to the regimental organization. There were others, of course, but it is needless to pursue that branch of the subject any further. Its importance depends upon a future possibility. If the existing disorganization fails to satisfy expectations a reaction may set in, and the corps, thoroughly disappointed, may wish to return to its old system.

From what has been said above, and the subject has not been treated exhaustively, one is justified in saying that the old organization is unsuitable to the new conditions in the artillery, and that its greatest defect was the impossibility of uniformity in teaching and training under it. The doctrine of specialties might be applied under any or no organization, as it affects companies only. But the regimental organization having been found to be an obstacle to efficient training, the question, What has been done to remedy the evil? calls for consideration.

The executive department having the matter in charge, answered that question to its own satisfaction, and recommended a remedy. The recommendation was embodied in a Bill presented to the legislative department. Unfortunately that Bill suffered much in passing the two houses, and reached the statute book in a somewhat emasculated condition. But it cut the cords which bound the artillery into seven separate families, and so destroyed the old organization. Instead of seven heads the artillery now has fourteen times seven and more in prospective, and one cannot help asking, Is that an arrangement likely to lead to uniformity?

The only feature in the new law which seems to favor uniformity is the provision for a Chief of Artillery. If the Bill had

been passed as originally drawn, that officer might have acquired some power for good, under it. As it is he is much in the position of the adjutant of the Third Artillery during the war. He has nobody behind him. He commands nothing; he controls nothing; and therefore he is responsible for nothing. He is merely an Inspector of Artillery and in that character might be a power for good, provided the General-in-chief, in addition to the functions of that office could be invested with the functions of commandant of the Artillery Corps. Such a combination is not unknown in the military organizations of the world.

The advantages of such a seemingly abnormal location of the command of the Artillery Corps are numerous and important. It will be unnecessary for our present purpose to mention more than two of them. 1st. It would invest a powerless chief of artillery with necessary power and its necessary consequence—usefulness; and 2d. It would bring the corps of artillery into direct connection with the same fountain of power.

But this is only a second-best arrangement. The first best would be a Chief of Artillery to command, with the rank and staff corresponding to the strength and importance of his command. This would make him a major general, and give him three or four brigadier generals for district commands. There would be nothing abnormal in this. It would only be applying to the artillery the rule adopted for the army at large. But the law denies that much justice to the artillery. It will have, very soon, 15,000 men in its ranks. It is, or will be, a corps of specialists. Its old organization has been abolished because of unsuitability to new conditions. Uniformity in teaching and training, when it had seven independent artillery heads, was found to be impossible. And so the experiment of no head is being tried, for the chief is a man of straw—no disrespect to the distinguished officer assigned to that position. But he must speak to the companies of artillery through the Commanding Generals of territorial departments, who probably will have artillery inspectors of their own, and artillery ideas of their own also. Not that they would disobey orders, but how long would harmony exist if commanders were not permitted to command?

The law has given the artillery a chief who is really an

inspector. He can advise and supervise, but he commands nothing. The question, Who commands the Artillery Corps? discloses the defect of the present system. No one commands it; and where there is no command there can be no responsibility. Nobody is responsible for the efficiency of the Artillery Corps. Is such a condition likely to prove satisfactory?

If, however, the General-in-chief were designated Commandant of the Artillery Corps in addition to his functions as General-in-chief, the hands of the Chief of Artillery would be greatly strengthened. He would be in a position from which he could communicate directly with the batteries and companies of the corps. As the staff officer of the Commandant of the Artillery Corps, he would be able to advise and supervise effectively; he could prescribe systems of teaching and training; and by frequent tours of inspection see that the system was properly carried out.

Such arrangements are probably the best that could be devised under the present law. The real remedy would be the investment of the head of the corps with command and responsibility, and the rank and staff which such a command would entitle him to. The strength and importance of the Artillery Corps entitles it to a major general as commander, and if the rule which determines the number of brigadier generals for the army be applied to the artillery, the corps should have at least three brigadier generals.

It may be difficult to account for, perhaps, but very peculiar and erroneous ideas have crept into common use in regard to the tactical organization of artillery troops. The craze for assimilation which was epidemic in the army a few years ago, imposed the infantry tactical organization and nomenclature upon artillery troops, and the word "battalion" has crept into artillery drill regulations. And really when four sea-coast companies are paraded with muskets in the middle of a five-acre lot, the resemblance justifies the cognomen. But sea-coast companies are out of place in a five-acre lot. Their proper place is with their batteries. And there the resemblance to infantry is lost. See these four companies at their posts, one of them at a 12" B. L. Rifle Battery; one at a 10" B. L. Rifle Battery; one at a 12" Sea-coast Mortar Battery, and one in the submarine

mine fields, and the absurdity of the assimilated nomenclature becomes apparent.

So also with the tactical unit of four batteries of field or horse artillery. It looks no more like a battalion than it does a line of battle-ship. It may have the same number of men, but that is no argument. If one were to argue that a cow should be called a horse because she had the same number of legs, he would be considered a fool. But really, his reasons are no more absurd than those of the authors of artillery tactical nomenclature. It is to be hoped that the epidemic of assimilation has sufficiently died out to permit the restoration of the ancient nomenclature to the Artillery Corps. The old name "Brigade of Artillery" as applied to the tactical unit consisting of four batteries of field or horse artillery, is far more descriptive and appropriate than the new name. So also with the combined garrisons of all the defenses of any sea-coast position. Take, for instance, the garrisons of the forts defending the approach to New York City by way of the Narrows. These would all be under the command of a superior officer of artillery, and it would be absurd to call them a battalion. Forts Wadsworth, Hamilton, Hancock, and the Mine Field constitute an artillery command of such importance, that the commander must be provided with a staff equal to that provided for a separate brigade at least. And therefore his command should be called a brigade of sea-coast artillery.

The tactical organization of the sea-coast artillery can be accomplished without the intervention of any law. It need not be, indeed it cannot be, uniform. The defenses of the approaches to New York by way of the Narrows are very different from those by way of the Sound, and the strength of the garrisons required to man the two systems would be very different. Yet each of them would constitute a separate command, and should be known as, say, the 1st Brigade of Sea-coast Artillery, and the 2d Brigade. The 3d Brigade might consist of the defenses at the entrance to the Sound; the 4th the defenses of Boston harbor; the 5th, those of Portland, and so on.

The brigades of sea-coast artillery so designated and located, should be permanent, and their garrisons should, as far as practicable, also be permanent. The longer an artillery garrison

remains at a station the more effective it becomes. It gets to know the channels thoroughly. It becomes familiar with all the landmarks, and is therefore better able to estimate distances than a green garrison would be. Then the gunners get to know their guns, and every detachment of specialists becomes familiar with the plant it has to operate. Every consideration of efficiency demands permanency for the garrison.

Of course, there are some sickly and disagreeable artillery stations on our extended seaboard. These, and in fact all artillery garrisons, should be recruited from the vicinity of their stations. Doubtless superior men would be secured when uncertainty as to station was eliminated from the question of enlistment. As to officers at sickly and undesirable stations, they might be transferred gradually. One officer of each company might be transferred annually. In this way continuity would be maintained and the temporary loss in efficiency would be reduced to a minimum. Similar transfers might be extended to other stations. Nevertheless, the fact that length of service at any station enhances the value of an artillery officer should not be forgotten.

Turning for a moment to horse and field artillery, the efficiency of these arms is always enhanced by concentration. Sixty guns massed against a selected point on an enemy's line of battle have a much greater effect than twice that number would have if distributed over an extended front. There are many good reasons for this, even if our own sad experience during the Civil War had not taught it. But this is not the place to discuss the subject. One may safely assume what the world has assumed ever since the days of Napoleon.

If then batteries must be massed and manœuvred in masses if they are to be effective in war, surely they ought to have some chance to practice it in peace. Field and horse batteries, therefore, should be assembled in brigades at convenient stations; the brigades should be permanently numbered and known as, for instance, 1st Brigade Horse Artillery; 1st Brigade Field Artillery, etc. Brigades should be commanded by superior officers of artillery and batteries should be permanently assigned to them. The designation of batteries of field and horse artillery, and companies of sea-coast artillery by numbers, is somewhat

confusing. It is much more difficult, for instance, to mentally locate Battery 14, Field Artillery, or the 60th Company of Sea-coast Artillery, than it would be if they were designated Battery B 4th Brigade, Field Artillery, and Company C 6th Brigade, Sea-coast Artillery.

As much as possible the assignment of batteries and companies to brigades should be permanent. If, however, circumstances should require the transfer of any company or battery from one brigade to another, it could be effected at once by an order.

The advantages of such an organization ought to be apparent. They are simplicity, elasticity, adaptability, and usefulness. The brigade is constituted by order. It can be made to fit any position. It can be increased or diminished at will. It combines in a convenient command the disintegrated units of defense. And it shortens the chain of responsibility between the units of action and the commandant of the corps.

The scheme of artillery sea-coast defense should have no connection with any territorial department. It is a specialty, and should be treated as such.

SOME NOTES ON THE CLOTHING AND EQUIPMENT OF THE SOLDIER FOR SERVICE IN THE TROPICS.

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THERE seems to be no military question upon which there is such great diversity of opinion and taste as upon clothing and equipment of the soldier. This diversity is seen not only in the difference between the clothing and equipment of the various armies of the world, but also in the variety of clothing in every army, and the various combinations of uniform found in every regiment. And it is believed that if the individuals of a regiment were allowed to exercise their own judgment and taste in the matter of their dress, every regiment would be as various in its costume as was the "Montgomery Invincibles," in which "every gentleman" selected "his uniform according to his taste and his means."

All this is said by way of introducing the remark, that I don't expect anyone to agree with all that I may here set down about our clothing and equipment in the tropics; and I don't expect many persons to agree with anything I may write.

As the theatre of action of the American army has expanded, we have met new and strange conditions that have brought correspondingly new notions about the clothing and equipment of our soldier. We had scarcely ever heard of khaki before 1898, and now it is the distinctive mark of the American soldier, even more than the blue is. We have learned by experience that the blue shirt and khaki trousers form a contrast that presents a fine target for the enemy's aim, and now we are trying to find a woollen shirt of the same hue as the trousers.

While worrying over a change in the color of the shirt, we should do well to consider a change in its pattern also. On the whole, the blue shirt has proved the most generally useful garment of the soldier's uniform; but it would be a far more comfortable garment in a hot climate if the soldier wore it as the Filipino invariably wears his shirt—that is, with the tail outside

of the trousers. This, however, is so contrary to our long established habit of dress, that it is not to be thought of. But a slight change of pattern would enable it to be worn outside of the trousers without shocking our sense of propriety, or rather custom. And about the only change required is to shorten the tail by two or three inches—that is, to about the length of the blouse—and either have no slits in the sides, like the sailor's "jumper," or have the slits modelled after those in the skirt of the officer's garrison blouse and have a light waist-belt of the same material as the shirt, held in place by a slide or keeper at the back and one at each side, and fastened loosely by a button in front. And, most important of all, change its official name from field shirt to field blouse.

Some of the advantages of this pattern are the following:

1. Coolness. The shirt-tail stuffed and wadded into the trousers around the hips and legs only prevents the circulation of air and causes unnecessary heat and chafing, while the wrinkles and folds between the cavalryman and his saddle don't add to his comfort.
2. The suspenders may be worn under the garment. Nothing looks more farmer-like and unsoldierly than suspenders worn outside the blue flannel shirt. Yet every man is more comfortable with his trousers supported by suspenders; while many, on account of a tendency to rupture or other internal weakness, cannot get along, at all, without suspenders.
3. It would do away with the unsightly and slovenly appearance of the white band of the drawers, which is usually visible above the waistband of the trousers when a soldier wears the field shirt.
4. In rains—and in rains in the Philippines no poncho or other rain garment is of much use—the water would trickle down outside of the trousers, instead of accumulating around the waistband.
5. In hot, sweaty weather, the clothing could be much more easily adjusted at short halts, or even while marching, and the soldier could "cool off" more effectually.
6. At night, after a long, hot day's work, the garment would be much less moist from perspiration—especially the tail, or let us say the "skirt," which could then be put inside the trousers and drawers, bringing fresh, dry flannel next the man's flesh in place of the wet, sweaty shirt-tail he is accustomed to.

It may be thought that a light, flannel blouse, of the pattern

now in use, would have all the advantages of the pattern of garment suggested ; but it would not. The main objection to such a blouse is, that the opening in front would constantly expose the abdomen to chill, if worn with the undershirt only, or no shirt at all. To men used to our styles of civilian or military clothing it is essential that the abdomen be kept covered, and flannel is the safest cloth for the purpose. And no state of discipline has ever been attained in our service that will keep enlisted men from flinging their blouses wide open and exposing their soiled shirts the moment they get out of ranks and from under the eye of their officers. The neat soldier, the one that is apt to have on a clean shirt, is the only one sure to wear his blouse buttoned throughout. A further objection to the present blouse for field service is its large brass buttons, which at night are uncomfortable to lie upon.

With the sort of "field blouse" suggested, a shirt or undershirt may be worn or not, as the soldier or his commanding officer likes, and the cartridge belt can be worn either outside or under it, as may be found most convenient.

The "shirt-waist," which has been tried by officers and men in the tropics, does not answer the purpose, although it is an improvement upon the shirt worn with the tail wadded and stuffed into the trousers.

The head-gear of our soldier has always given more trouble than any other article of his apparel, and it is still in a perfectly unsatisfactory condition. Of the seven kinds of headwear supplied by the quartermaster's department, none, except the fur cap and the blanket-lined hood, is ever satisfactory at any place or season. The campaign-hat is generally, almost entirely, worn by our troops in the Philippines, for the sole reason that it is the least bad of all the bad kinds of head-cover we have to choose from. It would seem that the big khaki helmet ought to be just the right thing ; but experience says, nay. It is forever getting knocked off the soldier's head by his or his neighbor's rifle, or caught in the limbs and vines of the jungle. When a man lies down, he can't see to shoot without taking it off. It won't sit on any part of the head, except the part it was specially made for. If a man lies on his back in the sun, he can't make it sit alone on his face, to shade it and his eyes. And if he lies

prone, it won't stay in place on the back of his head, to protect it and the nape of his neck from the vertical rays of the sun. To rest the side of the head on the knapsack and make the helmet sit upon the upturned side of the face, is simply a hopeless undertaking. And when not actually in use on the head, it is a white, or rather a brown elephant on one's hands. One can't sit on it and hold it down. It takes up as much room as a saddle, but can't be used as a pillow. If it is blown out of reach and a cart-wheel rolls over it, or a carabao plants his foot upon it, it is *hors-de-combat*. Though an excellent protection against the hot sun, and also against rain, it is in all other respects so bad, that it is hardly worn at all.

The campaign-hat, creased down the centre, looks right pretty on parades and reviews. It would crease more conveniently and look better, if it were an inch or two higher of crown. It is easily cared for when not in use, and stands the wear and tear of wagon-wheels and mules' shoes fairly well. Here ends the list of its good qualities for tropical service. With half a chance, it flies off and is lost at sea within two hours out of the Golden Gate. It refuses to stay on any normally shaped head, unless it is anchored with strap or cord, or is pulled down over it until one hears his skull grating together at the sutures. It absorbs and retains and concentrates the sun's rays to such an extent, that one voracious soldier declares he wore a looted egg in his for an hour, and found it cooked done and hard for his luncheon. It is the most certain, rapid and permanent hair-eradicator that was ever invented. In rain, it absorbs every drop that falls upon it, and after a little, has the weight of a leaden hat. And it does not keep the head at all dry. It sheds water a trifle better when built up in that unsightly, peaked form Mr. Remington's pictures have made famous. But this manner of shaping it is forbidden in orders, so is never resorted to, of course, no matter how hard it may pour, or how quickly the crease in the middle may fill up and flow over, down one's face or the back of one's neck. A little water more or less, in spots, doesn't make any difference in a Philippine rain.

When we went into the Santiago campaign and the mud and rain and glory of Cuba, where every person wore just any old thing he could buy in the Tampa shops, I wore, part of the

time, a little canvas hunting hat, and found it tolerably satisfactory. It was light and waterproof and cool, stayed on my head when I put it there, and was easily disposed of when not in use. And turned inside out, it made a fairly good wash-basin during the week or two that we were without such luxuries. I believe that some sort of canvas hat, with stiffly corded brim and high, light crown, and a wide air space between the sweatband and the hat, would be good for service in the tropics. The Spanish soldiers and the Filipinos wear straw hats; but they make a conspicuous mark to shoot at, and soon get all out of shape and bad looking; and they don't afford much protection against rain, and are easily blown off the head.

The khaki trousers are good, but they ought to be loose about the hips and thighs, like English riding breeches, for both infantry and cavalry, to prevent chafing and for ease of motion; and tight below the knee, short for cavalry, and buttoning close about the calf and ankle for infantry, according to the original specifications. This would entirely take the place of the leggin with the infantry, and be cooler and more comfortable and convenient. The leggin worn at present by the infantry is just twice as high as it ought to be.

It is believed that a light leather leggin, such as is now generally worn by officers in the Philippines, coming down only as far as the ankle, and without strap under the instep, would be more satisfactory for the cavalry soldier than the present form of canvas leggin. This leggin is troublesome to lace; the laces get broken and pulled loose in the brush; and the part over the foot and instep, and the strap under the foot, gather and hold mud like a road-scraper. The cavalry boot, of course, is as useless a piece of plunder in the Philippines as the dress-coat or the fur cap.

There is nothing in which foolishness manifests itself so largely in the American soldier as in the way in which he punishes his feet. But he isn't to blame for it. He can't help it. This foolishness is his birthright. Foot-vanity is national and hereditary with Americans, national or foreign born, apparently. There is probably not one perfect foot, fifteen years old, on the continent, and probably not one foot that hasn't suffered at some period of its life from a shoe too short or too tight. Most

of us learn foot wisdom after we have tortured our feet all out of their natural shape, and grown old. We are then ready to give our children and all other youth sage advice about wearing their shoes large enough, and especially long enough—advice to which they pay just as little heed as we did when our parents gave it to us, gratis, a score or two years ago. So there is little use of hoping the soldier will accept any comfort for his feet, because the very first prescription for comfort is big shoes. The next is one or two pairs of Government gray yarn socks. I have tried all kinds of shoes and stockings for hiking over sharp rocks, and through mud and water, but have found nothing as comfortable as a pair of quartermaster's shoes two sizes larger than I ordinarily wear, with the extra space occupied by two pairs of woollen socks. When one is hiking "foot-back," the feet are just as hot as fire, no matter how thin the socks and shoes may be; and a double thickness of soft yarn socks keeps them drier, and protects them better from the bruises of rocks and stones, and chafes the heels and the knuckles of the toes less than anything less. They are especially softer and more comfortable than cotton socks, when wading; and in the Philippines most hiking is wading. The shoes would be more comfortable if the soles were thicker. The leather becomes very soft after wading an hour or two, and yields uncomfortably to the pressure upon the sharp points of rocks and stones.

For guard-duty in garrison, some sort of serviceable rain-coat ought to be supplied the soldier, and, also, a light rubber boot. Most soldiers buy these articles from the rubber shopkeepers of Manila. Neither they nor any other form of rain-garment and rubber foot-wear are of the slightest use to the foot-soldier while hiking. The poncho as a protection against tropical rains would be no less serviceable, if it were made of cheese-cloth. Of a truth, however, except for the mud it makes, the rains give the foot-soldier very little inconvenience while actually marching. They make the air much cooler and more comfortable than the sunshine, and few Americans take cold in the Philippines through exposure to rain. Slickers and rubber coats make one well-nigh as wet, from perspiration, as the rains do; and the moisture is steam. For the cavalryman the oiled slicker is undoubtedly a useful garment.

There are some cold, rainy days and nights in the mountainous regions of the Philippines, when sentinels ought to have an overcoat or warm clothing. Every soldier should at least have a blue uniform. At Lucban, in the mountains of Tayabas Province, the officers and men of my battalion wore their blue woollen clothing for several weeks in December and January. The men had no overcoats, but the sentinels on post were often allowed to wrap their blankets about their shoulders.

The infantry soldier ought to be provided with a different blanket from the heavy, hard, cottony fabric at present issued by the quartermaster's department. There is no foot-soldier that will pack this blanket on a hike. He prefers rolling himself into as small a ball as possible, and shivering through the night, to lugging this blanket. The most that I have ever seen one carry is a half-blanket. Nearly all carry merely the poncho. But the soldier ought to have a blanket he can carry; one that weighs only half as much as the present blanket, but has as much warmth and comfort as can possibly be compassed in that weight. Indeed, his blanket should be the soldier's one high-priced article of equipage. It ought to be of the finest, lightest, all-wool texture, regardless of the price. After a hard day's mountain-climbing or mud-wading, the soldier ought, if possible, to have a warm, comfortable night's rest. The foot-soldier seldom gets it nowadays in the Philippine Islands, because he hasn't the strength to lug his blanket. In fact, the blanket, like the shoes and the trousers, ought to be of different sizes. The six-foot-three-inch man has to shut himself up like a jack-knife to cover with the army blanket, while the five-foot-six man has several inches to turn under at the foot.

That abomination called the "blanket-roll" is never seen in the Philippine Islands. Positively its last appearance is in the streets of San Francisco, when the soldier marches down to the dock to board the transport. As soon as he reaches the Philippines he buys him a native chest, or a tampipi, and puts his extra clothing into it. When he goes on a hike he never carries along the extra socks or any other extra clothing. Sometimes he carries a piece of a towel, and usually a toothbrush.

The blanket-bag, however, or knapsack, is one of the most serviceable articles of the infantryman's equipment. I served

for nigh a year in a mountainous region where a horse cannot carry a man, and I lugged my pack like any other "dough-boy," and I found the blanket-bag to be a splendid thing. I carried my half-blanket once, only, in a roll about my neck and shoulder. For heat, a fur boa would not compare to it, and the weight was all on one shoulder and one side of my neck. When I dropped down to rest, the roll was too troublesome and inconvenient to remove. Then I had my haversack dragging down upon me, also. With the blanket-bag it is all different. The straps bear equally on the two shoulders, are much cooler, and can be easily cast off when one sits down to rest. And the haversack may be left behind, and the rations and half-blanket carried in the blanket-bag. Whenever the men of my battalion had more than one day's rations to carry on a hike, they were allowed to carry them in the blanket-bags.

Whenever I could ride a horse, I carried a light canvas hammock, the kind sold by the quartermaster's department, and I got more comfort out of it than out of any other article of my kit. I suppose one has to learn how to manage a hammock. I have heard many officers say, "I can't sleep in a hammock—one has to sleep on his back"; or "It doubles one up too much." Well, it doesn't do any such thing, and one doesn't need to sleep on his back, at all. I never do. I sleep on my side in a hammock, just as I do on a mattress or the ground. But I had to learn the knack of the hammock. In the first place, it must be a canvas hammock and not a woven one. It must be strung square at the head, and circular, that is, so that it will bag at the foot. The head-spreader-stick should be as long as the canvas is wide, and the foot-stick about 18 inches. These sticks should be of strong bamboo, about an inch wide, with dull points at the ends to insert into the eyelets of the canvas. Take care that the strings are not crossed or twisted, and stretch the hammock pretty tight. Then insert the spreader sticks, catching the folded blanket at head and foot with their points, to keep it in place in the hammock.

For a tired man, this surpasses any bed that I know. In it one doesn't rest on the few projecting bones and bumps of one's body, but every muscle and bone bears part of one's weight. No matter whether I was in a native house with a cane-bottom

bed in every room, or in a cocoanut grove or a jungle, I slept in my hammock, whenever I could put it up. And whenever one can find anything solid to tie the head-rope to, and another for the foot-rope, or earth enough to hold the foot of a short piece of bamboo and the pins of two guy ropes, one can rig a hammock.

When mounted, I carried the following articles of personal equipment, besides my rations, field-glasses, etc., which made me about as comfortable as it was possible to be under the circumstances: in my saddle pockets an extra pair of socks and suit of underclothing, a towel, cake of soap, toothbrush—my pocket comb in pocket of shirt—rubber wash basin, extra blue shirt to sleep in, a soldier's mess-kit, and a stout working bolo or small hatchet. On the pommel of my saddle, my hammock and slicker, and on the cantle my blanket rolled in a rubber blanket.

No greater fake was ever perpetrated upon an unsuspecting and gullible people than the abdominal bandage. It is worse than a fake, it is a bad habit, a vice, a disease, but an acquired disease like whiskey and cigarettes. Once acquired, it is as hard to shake off as either of these vices. When we started to Cuba in 1898, the first question asked you, the last question asked you, the question asked you forty times a day was, "Have you got an abdominal bandage?" People were daft on the subject. Your friends wrote you to be sure not to start off without one. You were made to believe by Dr. Jaeger and the army doctors, who acted as if they were his paid agents, that your life absolutely depended upon it. It was a sort of anting-anting. And hundreds of us that had never had a pain in our abdomens were made victims of the vice of the abdominal bandage, and we shall probably wear them to our dying day. Nothing but death can rescue us.

Next the quartermaster's department issued them to the enlisted men, and the inspectors asked each soldier gravely, "Do you wear a flannel bandage?" and reported him and his captain if he told the truth and answered, no. Still, the enlisted men, who sometimes show a good deal of horse sense, refused to acquire the habit. I saw one half-drunk artilleryman staggering down the Escolta with a flannel bandage,

quartermaster's issue, fastened around him, outside of his blue shirt and trousers. The soldiers seemed to reason together on the subject. They seemed to say, "Here we are among the Philippine Indians, who not only don't wear flannel bands on their abdomens, but don't wear anything at all on them except their skin ; and yet there are some eight millions of them still living."

So the enlisted man won't wear the bandages ; but they are glad enough to have them issued to them, for they make first-rate cloths for cleaning guns.

MEAT RATION IN THE TROPICS.*

BY MAJOR P. R. EGAN, SURGEON U. S. ARMY.

FOLLOWING the late Spanish War, American soldiers were scattered from the Arctic Circle to the Equator. Speculation as to their requirements under these new surroundings soon became rife. The necessary clothing alterations were sufficiently apparent, but the requisite food is still a matter of discussion. In the first days of the occupation of Puerto Rico an officer of the line wrote home that his principal food consisted of crackers and milk, and that he was in excellent health because he avoided all heating diet.

Physiologists had for a long time observed that there was a rise of body temperature of nearly one degree in the tropics; that the pulse rate was lowered; that respiration and blood pressure were diminished; and that there was a marked languor and tendency to depression. Proteids and fats increased heat production, and should, it was stated, be abandoned or used very sparingly. They also proceeded to analyze the diet consumed by the Negro in the Antilles, the Hindoo in India, and the Malay in the Eastern Archipelago, and to point out a great diminution of the proteids and fats in his dietary. But they also discovered that the carbohydrates were diminished to an equal degree; or, in other words, that their diets were those of chronic starvation, a condition that exists to some extent in most tropical countries where the rate of increase of population is so great that the country is unable to raise sufficient produce to feed them, and where, as in India, famines are now beginning to be regarded as inevitable. Overlooking these facts they declared that there was need of more sugar and tropical vegetables, and less meat and fat to reduce our dietary to their standard; that is, to the standard of those who are unable to procure nourishing food. But coming nearer home, these same physiologists would not for a moment declare that because the Crofter

* Read before the Lyceum, Fort Douglas, Utah, January 25, 1901.

lives on oatcake, and the Cotter on potatoes, that the diet suitable to Scotland was oatmeal, and to Ireland potatoes. Yet, guided by their theories, some, like the line officer, lived principally on crackers and milk, and others believed like Major Louis Livingston Seaman, surgeon to the First Volunteer Engineers, who is reported as declaring before the board of officers on the Tropical Ration that what should have been a delightful outing for his regiment was turned into a tragedy because of the heating foods his troops had to eat. When they landed in Puerto Rico not a man was on sick report. In less than three months nearly one-third of the regiment was on the sick list, and the rest were scarcely able to carry their personal belongings when they reached New York. Dr. Seaman said that all had suffered from bowel irritation, and that when they needed delicate food they had to use that which had inflamed the intestinal tract and had produced symptoms like a catarrhal condition, making the patient peculiarly subject to attacks of typhoid and other fevers. He also said the food used was diet food and not the regular rations. However, few of the persons who have had extended experience of the tropics agree to the so-called heating effects of the proteids; nor does the diet of the natives who can afford other than starvation fare tend to support this theory. The late governor, General Henry, of Puerto Rico, wrote in December, 1899: "The better class live and dress like ourselves. The food of this class, is for the early meal, coffee and bread for breakfast; at noon, coffee, vegetables, eggs, meat and dulces, or sweets. The night meal is about the same. They are great meat eaters, it being cooked in various ways."

In January of the same year, Colonel O'Reilly, chief surgeon, Division of Cuba, who had been sent to Jamaica to investigate how Great Britain cares for her soldiers in the tropics, reported: "No improvement on the present ration of the United States can be suggested. If it errs at all it errs on the side of too great liberality." In December, 1899, I wrote the following letter to the *Boston Medical and Surgical Journal*: "As a supplement to the article of my scientific friend, Colonel Smart, on the 'Army Ration,' let me add a few practical observations gathered in Puerto Rico. Duty has taken me at one time or

another, since the first days of the American invasion, into almost every town from Ysabella on the northwest coast to Humacao on the east coast, and then up the military road to this capital. In the districts of Guayama and Southern Humacao it was part of my business to investigate the cause of deaths among the natives. Everywhere I found the main cause assigned to be anæmia and phthisis. Everywhere I went I was struck by this ever-prevalent anæmia. The pale, yellowish, waxy skin, the bloodless lips, and the swollen, puffy features, formed a picture never seen by me outside of tropical Puerto Rico. Yet I soon found that these people had been living on rice, beans, maize, dried codfish and fruits. Meat very rarely entered into their diet. They and their fathers before them had lived exclusively on the diet urged by the public press as suitable for tropical climates, and the result filled the hospitals with such ghastly cases of anæmia that no one who has once seen the picture can ever forget the impression. On the other hand, I soon discovered that the people who lived in the towns and could afford it ate two hearty meals daily. These people, I believe, use more meat than we use in American cities, and there is no doubt in my mind that I have used more meat and felt more need of it since I have been here than ever in the same time in the United States. Yet I am one of the few who did not have to go home for ill health ; while the natives that eat in the hotels with me, and as freely as I do, are perfectly healthy individuals and show not the least trace of anæmia. Only a few days since, a native informed me with much gusto that one of the best things that Puerto Rico afforded was *chuleta de cerdo* (pork chops), surely one of the most unsuitable articles of diet for a tropical climate, as our physiological friends will tell us, and yet the absence of which, in my opinion, made the native anæmic to a noticeable degree. These observations are so common in this climate, and have been so forcibly impressed on me, that I feel more and more the wisdom of going very, very slowly in urging alterations in the ration."

Major Stephenson, Surgeon U. S. Army, also made the following statement : " My personal experience of a year in Tampa, Puerto Rico and Santiago was that I craved and ate as much meat of all kinds relatively to all food eaten in cooler climates.

I believe that meat consumption among the natives of hot climates is limited to their purses, not to their tastes. In Cuba and Puerto Rico I found the noon and evening meals in private houses and restaurants prodigal of meats of all kinds."

The absurdity of arguing from theory and not from experience was forcibly impressed on me as I read on a balcony in San Juan the essay that gained the hundred dollar prize given by Major Louis Livingston Seaman for the ideal tropical ration. As I reached the part that discussed the "distaste for fats in considerable quantities, so early acquired in the tropics," I was aroused by the cry of the "Char-r-rone" vender. For more than a month I had noticed that same cry every afternoon. I had tried faithfully during that time to detect what he was calling out, but had as signally failed, until one evening I was fortunate enough to have an Englishman educated in Spain along with me when he made his rounds. Then I learned that "Char-r-rone" was the Puerto Rican abbreviation for "chicharrones," and that this was Spanish for pork, fried crisp with the skin on it. For twenty centavos I obtained a piece about a foot square. I found that while the outside was crisp the interior of my piece, an inch in thickness, was simply cold fat pork with a very little lean through it. The man sold it as a *bonne bouche* through the streets every afternoon. A couple of mouthfuls was all I desired to test, but the rapidity and relish with which my four little Puerto Rican girl friends devoured it gave me a striking example of the "distaste for fats in any quantity so early acquired in the tropics," and of the value to be attached to theories derived from analysis of "jibaro" dietary, as to what constitutes a suitable food for the tropics. On the other hand, it is now being claimed by some writers that the depression and languor of the tropics call for increased food and vinous stimulants and this idea seems to be warranted by the large amount of meat, and of claret, or water with a dash of rum, used twice, daily, by the better classes of the population.

The board before which Major Seaman made his plea has recently, according to the public press, reported to the Secretary of War that, "The recommendation that the fresh meat ration be reduced in quantity was so opposed to all the teachings of experience, both in our country and in Cuba and Puerto

Rico, that the board was unable to accept the recommendation as conclusive without further investigation. Two members of the board have served in Cuba and the third in Puerto Rico, and their personal experience has been that as much meat has been desired and eaten as in the United States, and with no deleterious effect on the health of the men. The natives of these countries are also large meat eaters when they are able to secure it, and the meat eaters are noticeably stronger and healthier looking than the poorer classes, who from necessity are mainly vegetarians. The board also interviewed a number of officers and other persons that had been in the Philippines, and, taking all sources of information together, the board is of the opinion that it would be a mistake to make any fixed reduction in the meat ration." The criticism of General Henry in the above quoted article that, "The objection to the meat (of Puerto Rico) for an American is, that having no place to keep beef after being killed, it has to be put in the pot in a hot, quivering condition; and I believe this made many an American soldier ill," is in part well applied. Puerto Rican beef cannot be cooked American fashion and be other than tough and unpalatable, as it is killed about 3 o'clock in the morning, and eaten by 11 or 12 o'clock the same day. I had so fully recognized this fact that for more than a year before leaving the island I refused all "bifstek" or "rostbif," as presented by the seductive native. Only Swift or Armour refrigerated beef can in Puerto Rico be prepared American fashion. Native beef, however, prepared by native cooking, is tender and palatable, devoid of this objection and is habitually consumed with only the best results. In fact, when they ask us to replace the meat ration by vegetables we should not forget the Spanish motto that says: *Bellotas y tostones hacen malos trabajadores.*

THE NEGRO VOLUNTEER: SOME CHARACTERISTICS.

BY CAPTAIN R. L. BULLARD, SUB. DEPT. U. S. A., LATE COL.
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"If I is er nigger,
Do it cut any figger?"

— *Pickaninny Rhyme*

DOES the color of his skin make any difference? No, it does not make any difference, but it indicates differences between the volunteer in black and him in white; differences so great that they almost require the naturalist and do require the military commander to treat the negro as a different species. By the military commander, who deals with mental and moral qualities, these differences cannot be overlooked; for he must fit his methods of instruction and rules of discipline to the characteristics of the race. Mistakes, injustice and failures would result from his making the same rules and methods apply to two races without regard to how far apart set by nature or separated by evolution.

For the Spanish-American War a number of volunteer negro regiments were raised. It was my fortune to command one of these. Among volunteer negro regiments it was unique in composition. Its commissioned officers were all, except the chaplain, white men of good social standing. Almost without exception they had lived from childhood among Southern negroes. They were selected and appointed by a governor who knows men, both white and black. The enlisted men had no choice in the matter. There were no elections of favorites by men who base their choice on the number of drinks "set up" by rival candidates. The enlisted men were negroes. Men with a larger proportion of white blood were rejected. True average negroes were gathered, Americans from the towns and plantations of Alabama, and Cuban, Jamaican, Mexican, English and African negroes from the seaport towns of Florida, Alabama, Mississippi and Louisiana—laborers, loafers, tramps, teachers, preachers, educated and illiterate—a great variety of

the same article. Twelve hundred of them for nine months under close and constant observation, in drill, instruction and discipline, strongly emphasized their characteristics.

Although probably the poorest, negroes, of all classes of American citizens, have the lightest hearts and the best humor. I know that we frequently hear used of many of them such expressions as "ugly," "surly," "mean-looking," etc., but such things can rarely be said of any negro who has become a soldier. Even under great provocation, such a mental condition is with him temporary. Good humor is his normal state, to which he will return with the greatest elasticity. With his fellows he is soon chaffed into good humor and cheerfulness. This characteristic is of the utmost value to the volunteer. In camp or campaign, under the trying conditions of damp clothes, wet blankets, rain, heat or cold, work or worry, irregular or short rations, and that surrender of will incident to the soldier's life, no quality is more conducive to efficiency in a soldier.

They are lazy, too? As soldiers, emphatically No. As individual, lone laborers, it cannot be denied that they trifle. But send them on any duty in a party, send a squad, a platoon, a company, as soldiers go. There is the secret. Who has seen squads of negro laborers at work? Do they trifle? I tell you No. They move together, none lagging, they keep time, they strike with a will, and they accomplish the most amazing amount of work. It is evident that they but need the principle of association, of union, of cohesion, the principle of military organization and action, to make them the most willing and effective workers. They are not patient, solitary plodders, but with a whoop and a hurrah, under the impulse of enthusiasm, with their comrades at their sides, they will do anything, say everything, to the measure of song, the beat of drum or the fall of blows.

From daylight until far in the night, a negro camp is a steady hum of laughter and talk, dance, song, shout, and the twang of musical instruments. It is a scene full of life and fun, of jostling, scuffling and racing, of clown performances and cake-walks, of impromptu minstrelcy, speech-making and preaching, of devilling, guying and fighting, both real and mimic. They have the most social natures. Even when they

can read or write, they prefer the conversation and companionship of comrades to books and papers. They go in parties, they herd. Call for a single volunteer for any duty and it is like pulling eye-teeth to get him. Call for two and it is difficult to keep from taking twenty. In the lonely duty of the sentinel, this herding peculiarity becomes a positive fault, often leading to neglects of duty or temporary abandonment of post for the seductive companionship of some nearby comrade or friend. "Colonel," said a visitor to my camp, "your sentinels are sociable fellows. I saw No. 5 over at the end of his beat entertaining No. 6 with some fancy manual of arms. Afterwards, with equal amiability, No. 6 executed a most artistic cake-walk for his friend."

The chronic complainer is the rarest of things among the negro volunteers. They are too light-hearted, too good-humored, to long remember the small inconveniences that give excuse to this nuisance among soldiers. But there is one thing about which they will complain, nay, fight and fight quickly and complain afterward. The cook must give them a square deal. If Bill Jones gets two rounds of sugar in his coffee, Jim Williams most strenuously insists on having two rounds. It is not, note you, so much quantity that he is demanding as it is equality, absolute evenness and impartiality in the deal. He may not even care for the sugar, and certainly his coffee is sweet enough for him if the rations are scarce and all are on short allowance. This general claim for "his share," added, of course, to the natural and proper demand for plenty, in reality and without exaggeration makes the duties of the ration-sergeant and cook not only difficult but even dangerous. They have many growls to stand, and many fights on hand unless saved by the presence of a company officer with firm authority. But this, I say, almost exhausts the negro volunteer's list of complaints. His tent may leak, his clothes may not fit him, his shoes may pinch, he may have to sleep on the wet ground, or drill in the rain or the hottest sun—no matter. It is a shadow, it passes, it is soon forgotten. It is easy to see that careful, skillful officers who will look to these things without the soldier's complaint, are more necessary to the negro volunteer than to the white.

Negroes know music by nature, it is said. No, but as a race they know time. They have it, they are born with it, they continually practice it. Together they even labor to the time of a song, or to the stroke of the axe, the pick or the hammer. As soldiers under arms the beat of drum, the measure of military music, makes all one. Thought and movement in time, they march on parade with swelling heart and the most exact and cockiest step, and there do the most wonderfully synchronous manual of arms that the heart could desire. No, it is of no great military value, but it is beautiful.

As to learning the usual military drill, there is one other emphasized difference. More than the white volunteer he must see and do instead of hear in order to learn. "In at one ear and out at the other" with him. Make him do or let him see what you want him to learn to do.

The traditions of the negro race and their general lower standing in society have in the past taught a marked respect for the gentleman—that class from which the commissioned officer in general comes. Nothing, absolutely, is more necessary to a good soldier than a proper respect and regard for the officer in authority over him. The negro, even as the greenest recruit, almost surely starts with correct ideas on this subject. It is not much of an exaggeration to say of the inexperienced young white recruit that he has no respect for anything, above all for any man or authority. Just so far is he in the beginning behind the negro recruit, for this respect must come. It is the *sine-qua-non* in soldier-making. It usually comes to the white recruit only after many bitter lessons, after many sharp "call-downs" to inordinate conceit, many grievous wounds to his false pride. In the Spanish-American War, time and gravity of crisis were lacking to fully accomplish this with him, and disrespect, or at least a lack of respect, was the rule. This was not the case with the negro. He that I saw, seemed to pride himself on being a shining example in the other direction.

It is, however, as hard to teach him respect for his non-commissioned officers as it is to teach his white brother the same for his commissioned officers. Only stringent measures, the most unqualified support of the non-commissioned officers, in all

cases when they are not manifestly wrong, will accomplish it in any reasonable length of time. More than with the white man, infinitely more, it is important that he who gives orders to a negro be far above him in social and military rank. He objects to being commanded by any man not of the best standing. His contempt for "poor white trash" is proverbial. All experience still shows him unwilling to accept one of his own race as much his superior. I know that he will say that he will do so, but in fact and on trial he will not. It is necessary to go out of his race to find him efficient and acceptable higher officers. It is an error of the race to consider authority as flowing from the person and not from the office. Between two of different rank, this is an error that works ill results going and coming, from the superior to the inferior and back again. It makes the superior overbearing and the inferior insubordinate. It shows its worst results between the non-commissioned officer and the private, until by much instruction and wrangling they both learn the true view, that the non-commissioned officer is only the instrument of the law, that authority flows from the office and not from the person.

Out of respect there quickly grows in the negro volunteer for his officer a most remarkable trust and reliance. His captain becomes his scribe, banker, general business manager and adviser. A beautiful relation, you will say. Perhaps, but it is a trying, fretting, onerous one. To fill it the officer must not only be an officer and a gentleman, but he must be considerate, patient, laborious, self-sacrificing, a man of affairs, and he must have knowledge and wisdom in a great lot of things not really military. If he try to fill it his company is efficient almost in proportion to his effort: if he fill it, he is established. His wishes become regulations, his word law. If he cannot or will not fill it, his men become and feel themselves as sheep without a shepherd. They grow discontented, they feel neglected, they regard the company as without a head, and they never make good soldiers. White soldiers never come to depend and rely quite so completely upon their officers.

The captain-banker relation is the most difficult of all. Not, however, for financial reasons. It requires more patience than money. Negroes are no hoarders. They love money, but they

love it solely for the pleasure it brings, the sweet delight of getting rid of it in their own way without responsibility. On pay-day in a negro volunteer camp there is probably more loose cash to the square foot than anywhere else in the world. On that day large and small cash and even large rolls of bills have been picked up which seemed never to have had any owner. The great game, Craps, and only Craps, is running everywhere; large sums are so rapidly changing hands that many players do not know how much they have, while many others only know that they have nothing. But even he who has lost all, has had his pleasure. He is no mourner nor squealer over bad luck. His only grief is in thinking how far off next pay-day is and how he shall in the meantime provide himself with a little pocket money. Ah, the captain; yes. He will borrow a nickel of the captain to-day for a square of tobacco, and a dime to-morrow for a melon, and next week a quarter to go to the show, and then his friend from whom he borrowed fifteen cents "a mont' ago" brings sudden and tremendous pressure upon him to pay at once, etc. The banker may not be squeezed, but he is probably greatly crowded, for his clients are numerous. Next pay-day the borrowers repay quite promptly, perhaps, but they may as well have not, for often the next day, nay, even the very next hour, they are again borrowers, or try to be, in the same way at the same bank. The banker must be patient, he must not expect too much. Once into it, he cannot expect to be able to throw off the habit without loss of money perhaps and certainly not without partial loss of prestige with his men. For they seem almost to require officers who are not only able but who are willing to help out their private shortcomings.

His jolly good-humor, his happy carelessness, which make him bear discomforts with so much equanimity, which make him laugh when other men grumble, which make it a joy to see and a pleasure to command him under hardships, has some faulty sides. That disposition too often indicates a lack of proper manly pride. This is likely to put him beyond the reach of moral suasion, censure, reprimand, or even the disgrace commonly thought to go with imprisonment, hard labor and similar punishments. Plain censure for carelessness or neglects is as likely to awaken stubbornness as penitence. In fact, of all the usual

punishments it may be said that they are but little regarded unless they can be made very sudden, and above all, unless they can be made to draw with them the ridicule of comrades. Severity is not half so effective as ridicule, if this latter element can but be introduced. After many severe means had been tried in vain, a certain company had its frequent stone-throwing fights completely stopped thus: One of the fighters caught by an officer in the very act of grabbing up a stone and throwing it at a comrade, was on the instant marched away some one hundred yards, stone in hand, under the eyes and amidst the laughter of the whole company, and made to deposit the stone very carefully outside the limits of camp.

Again there is danger that his jolly carelessness may have settled into irresponsibility. Yet I will not dwell on this, for, from whatever cause it may arise in the negro, it is not as stubborn and ineradicable as the same fault which in the white recruit arises from a false pride that makes him unwilling to acknowledge himself accountable or responsible to any one than himself.

For his less susceptibility to censure the negro volunteer more than compensates by a remarkable docility under praise. So ineffectual is fault-finding and so powerful praise, that I am almost ready to say that where of two negro volunteers side by side one deserves praise and the other censure, it is almost useless to do more than give the praise to the one and point out his faults to the other. If both praise and censure are given, and he who has received censure afterwards improves, it will be almost surely found to be due to the praise which he has heard given his neighbor for excellence rather than the censure given him for his own deficiency.

One of the greatest difficulties with the Southern negro volunteer is the mighty, the almost irresistible propensity for carrying concealed weapons. Contrary to the popular impression as to his preference for razors, pistols come first in his estimation, dirk-like jack-knives second, with razors a close third. But he loves a pistol. It is almost impossible to keep one out of his reach. He always looks at it with longing eyes. He will throw away his last cent on it. He will have it at any cost. It is his greatest temptation, his curse as a soldier.

Rifles and ammunition may lie around loose all over camp, but the pistol, no matter whose or where kept, cannot be saved from clandestine use and theft. It is his very greatest enemy. It begets thievishness, insubordinations, disorders and riots, although its use in camp fights is by no means so common as that of "rocks" and big knives.

When it comes to a pocket knife, it is in many cases nothing less than a great dirk or a spring-back affair, with a reach of handle and blade that frightens one to look at. There is but one help for the concealed weapon habit, to-wit, the very severest punishments with total confiscation and destruction of the weapons.

The impress of a thing that has happened beyond sight is most weak. There is a manifest and troublesome disposition, or rather inability, in many negroes to stretch reason to any proper comprehension and consideration of offenses committed elsewhere than in their presence. The consequence is that they are too often found siding with a criminal against the law. The evil effects of this characteristic usually crop out in the soldier in insubordination and mutinous conduct, and are second only to those of the love of concealed weapons. The gravest neglects of duty, the most serious breaches of discipline, robberies, murderous attempts, any, even the worst crimes of which a soldier can be guilty, are not regarded, or if regarded, mean almost nothing to his negro comrades who did not see the act. Let the offender be seized in the very act of a most violent or heinous crime. As he is being conducted to the guard-house, he becomes violent, curses, threatens, fights, until it is necessary to tie or beat him into submission. Some comrades witness only the last. Shameful! brutal! cruel! He has done nothing. Some one tells them. No impression. He couldn't have done it; they hadn't seen him do anything. Enough; no further thought; a rescue; disorder; almost mutiny, in which all the ignorant bystanders may be counted on to join. Or perhaps the offender has been duly delivered over to justice and condemned to chains. No matter how heinous may have been his offense, he usually gains the sympathy of all who had not seen or suffered by his crime. His punishment is looked upon more as the revengeful, tyrannical oppression of strong authority than

the meet punishment of his crime. It is stripped of disgrace and turned into martyrdom. It is a grave common fault. Determined, strong, fearless military discipline alone wipes it out in the soldier. It will remain for generations to come in the negro civilian.

A characteristic to be carefully borne in mind and watched by the commander is the negro's susceptibility to the contagion of passions and excitement. Is the captain a little "rattled" at drill? His men feel it. Does he lose his head, become wild, frightened, in any way excited? His men catch most remarkably his every emotion. Less than with white soldiers can he bitterly, impatiently or contemptuously reprove. The answering emotions of his men will be hurtful to them as soldiers. Emotionally they are too responsive. It makes them to a corresponding extent uncertain, unstable. "General McClellan" and "Governor Johnston" are at the game of "Craps" in presence of half a dozen lookers-on. Governor questions General's honor; General replies sharply; hot words follow: anger grows. Every looker-on has caught the emotions and taken the side of one or the other player, and in the resulting fight, not only General and Governor, but their whole suites take part. Always some one in authority must be on guard to catch and end these celebrations in their first stage, or real hurts, many enmities and much disorganization will result.

As a rule our negro volunteer comes into service with a very low conception of the obligation of the enlistment oath. Many are apt to regard it as a mere contract of service between them and their officer, of no just right binding if after trial they prefer to throw it up. Under this low conception many desert. When known to the officer, such wrong ideas are easily eradicated.

More deeply rooted, however, and more difficult of correction, is a certain common lack of honor. In small matters between comrades there are many, many breaches of honor. He who has received money on trust noisily and vehemently denies it. He who has borrowed becomes so hurt by a reminder that he absolutely refuses payment. Manly admissions of wrongdoing are most rare, while dodges, circumventions and prevarications are very, very common. Small thefts are common.

Yet a thief is rarely discovered, although all who know soldiers, know full well that a really honorable, thief-hating company quickly catch or suppress their thieves. These faults are not ruinous, but they create bickerings hurtful to discipline and beget a lack of that mutual confidence so essential to the morale of a command.

Harboring ill-will is no fault of the negro. Harshness, rudeness, injustice, even personal insult or injury, though not forgotten, do not long harrow his soul nor make him revengeful. He is no brooder. If the impulse of violence or revenge can but be caught by an understanding authority, at the moment of provocation, it is easily, I repeat, most easily restrained, and quickly subsides. Then, provocation ceasing, all probability of disorder fades and passes forever; for the sun goes down not upon his wrath. If he has been disorderly, if he has rioted and shot, it was not under the influence of slow-burning hate, vindictiveness, but under the quick impulse of anger or the sting of insult or injury. If he has gotten beyond control, it was because his officers have not understood him and been watchful, or have been unable to be on hand when he has been provoked. Even under the influence of passion he quickly recognizes and obeys authority, and, passion once controlled, vengefulness, hatred and malice do not long stay in his heart to lead him into violence.

One of the commander's most powerful aids—nay, his *most* powerful aid—in securing good conduct, attention to duty and discipline, in bringing out, in fine, the very best that is in the negro volunteer, lies in touching him at the most sensitive point in his nature, his color, and in appealing to him for the honor and advancement of his race. "Are you willing to be dirtier and more ragged, more unmilitary, to do less and know less than a white regiment? Your government has given you all, your very freedom. Far more than the white soldier you owe it honest and faithful service. Will you allow the public to say: "It's a negro regiment, nothing can be expected of it but poor drill, bad discipline and disorderly conduct"? Your service is a privilege, an opportunity to show the gratitude, manhood and worth of the negro, an opportunity to raise your race higher and faster in the world's estimation by a few acts in a few months

than by all the agitating, talking and voting your whole race can do in ten years. Make bad soldiers, learn nothing, do nothing, be disorderly, riotous and mutinous, and you will deal your whole race a blow from which it cannot recover in half a century." "Improper, weak, rubbish!" the old Regular may say, I reply: "It is effective." It has made the dirty clean, the ragged whole, the crooked straight and the lazy work, the ignorant learn and the disorderly and riotous orderly and quiet. With the untaught negro volunteer, it is stronger than any love of glory, stronger than any sense of duty, than personal pride, hope of reward or fear of punishment.

Bravery is no uncommon quality. Soldiers, white and black are brave enough, however untrained. With all raw troops the first and most urgent need is not bravery, but respect for authority, obedience, willing and loyal subordination to the will of the commander. By character more submissive to discipline, by nature more good-humored and happy, from social position more subordinate, from previous habit of life more accustomed to yield respect to superiors, from poverty more used to plain food, fewer clothes and comforts, the average negro volunteer comes to the colors with more of the first urgently needed qualities of the soldier and readier for service than the white. He ought in all reason to make and I believe he will make a sudden emergency soldier *par excellence*.

THE VISIT OF THE ALLIES TO CHINA IN 1900.*

BY CAPTAIN HENRY LEONARD, U. S. MARINE CORPS.

ON the afternoon of June 8, 1900, in command of a detachment composed of one second lieutenant and thirty marines, detached from the regiment at Cavité, in the Philippines, I left Manila Bay in the U. S. S. *Nashville*, and after a pleasant run of ten days, passed up through the Gulf of Pe-chi-li, and arrived off the Taku bar. The sight which presented itself to view was a magnificent one. The water off Taku being very shallow, vessels of heavy draught are compelled to anchor out of sight of land, and here, with an air of calm, with no apparent *raison d'être*, lay one of the finest fleets ever assembled. About forty men-of-war, of every conceivable type and description, from the frowning and formidable *Centurion* of her Majesty, Queen Victoria's Navy, and the stern, forbidding *Rossia*, of the Russian service, down to the torpedo boat *Whistle*, which glided in and out among these floating fortresses, represented many nations equally different and diverse, and indicated to us for the first time that more was at hand than the protection of foreign residents from a few Boxer inroads. Gun and bugle announced the presence of admirals and other persons of high degree, and the bursting forth of heavy ordnance in salute gave the whole scene the appearance that a great naval tragedy was about to be enacted. The German ships were all cleared for action, and as we hove-to, a graceful German cruiser was circling around a Chinese vessel, anchored near by, like a cat watching a mouse—waiting developments.

We found the situation to be briefly as follows: On June 15th, a concerted demand had been made by the admirals and senior officers present (in which our admiral did not join) that the Taku forts be surrendered, and that this surrender be made before two o'clock A. M., on June 16th—that, at a little before one o'clock A. M., on the latter date, fire was opened by the forts

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on the smaller vessels of the nations, lying in the Pei-ho River abreast of them, and that, had these vessels not shifted their berths shortly after dark, in anticipation of, and abundant caution against, such action, they had all inevitably been sent to the bottom. That prior to the demand on the forts, guards had been sent to the various legations in Peking, and that, fearing serious trouble, a subsequent force of about 3000 of the Allies had started for the same place, under command of Vice-Admiral Seymour, Royal Navy. That this expedition, unable to get into Peking, on account of opposition by heavy forces of Chinese, lay cut off from help, at some point between Tien-Tsin and Peking. That the foreign concessions of Tien-Tsin were besieged and in the direst distress, and that all communication with Peking was cut off. That in the fight which followed the firing on the ships, the forts had been taken and were in the possession of the Allies—that was the situation.

On the 19th, a further force of 100 marines from the same source, under command of Major Waller, having arrived off Taku, the entire command, numbering 130 all told, started from the U. S. flagship *Newark* on board a small German passenger steamer, which had formerly plied between Shanghai and the various Chinese coast towns of importance, but which had been "commandeered" by the German admiral and pressed into transport duty. This subject of transportation, the actual getting of the landing parties from the various ships to the point of disembarkation, a distance of miles, was a vexed one, and one which the different admirals were solving so far as possible in various ways. There are not a large number of tugs and lighters in the vicinity of Taku at any time, and those that had been previously there were taken up-river by the Chinese when trouble began. As a result of this, long strings of boats loaded to their gunwales with marines and soldiers and towed by launches could be seen shoving off from the various ships in a never ending procession, from dawn till dark, and all this time with a sea running so high that under conditions admitting of delay, boats would not have been lowered. Antiquated junks and lighters in such numbers as were obtainable, were doing valiant duty in this line, and small passenger steamers were hurrying to and fro, engaged in furthering the same cause.

Pursuant to arrangements made by Admiral Kempff, we were taken on board a steamer in which German sailors were being conveyed up-river to garrison some of the captured forts. While upon this vessel, I was surprised to find upon examination that these sailors were armed with a weapon of the most antiquated pattern—the German Militar-Gewehr of the model of 1876—but, upon making inquiries into the subject, I was informed, by some of the German officers, that a new rifle of late design would shortly be issued to them, having long ere that been used by their army troops. The precision of every movement of these ponderous Teutons and their knowledge of infantry drill, together with their erect military bearing, was as surprising as it was pleasing to look upon. The river trip, so far as we went, was a most picturesque one; lying off the forts we saw the vessels which had been engaged in their reduction, and though few of them were seriously damaged, all bore marks of having been recently in action. As we passed this flotilla, three torpedo boats, formerly the property of the Chinese, which had been captured by the British up the river some distance, were being taken out to the fleet. This capture was most generously shared by the Englishmen—the Germans and Russians each getting one and the captors keeping one for themselves. One of the German gunboats, the *Illis*, had been hit many times, a shell carrying away her bridge and sending her commander, Captain Lands, to the deck below with a shattered leg. This gallant officer, after being thus grievously hurt, struggled to his feet, and clinging to the rail, fought his ship for over an hour, until exhausted by pain and loss of blood, he fainted on the deck. The last time I saw him was on the occasion of a visit to the German hospital at Yokohama, just prior to my departure from that place. After suffering for three months, he was still the life of the institution, and remarked humorously to me that “he was then engaged in trying to grow three inches of missing bone in his wounded leg, and that he feared the attempt would end in failure. Subsequent examination showed that shells from the large guns of the ships had made but little impress on the forts, the walls of which, made of clay mixed with rice straw and water, and of great thickness, were pierced but little damaged. The Pei-ho is a most tortuous stream, and

keeping a vessel in its channel a most difficult feat. On one occasion after another, one's sense of distance and idea of location was beclouded by finding the vessel doubling on her course and travelling in a diametrically opposite direction from that originally pursued. The banks on both sides were dotted with densely populated towns, in which the houses were built so closely together as to barely admit of passage between them, where streets were unknown, dogs omnipresent, and filth everywhere. Finally, after a trip unusual in that it was devoid of groundings, we arrived at Tong-ku, and saw the U. S. S. *Monocacy* lying alongside the bank. The latter vessel is, as you probably know, an iron, side-wheel river gunboat of venerable type, which has been on the Chinese station from time immemorial. She had been ordered up from Shanghai on the outbreak of trouble, and was fired on and hit during the Taku fort engagement, though she took no part in the same, as, even had her orders contemplated such action, she was at that time filled with non-combatant refugees. This vessel and her officers rendered invaluable service throughout the hostilities. She was the base on which much-needed supplies were collected and from which they were sent up the river in armed launches and tugs captured by her crew. To her, after the relief of the concessions, the wounded were sent, and there cared for until they could be dispatched to the hospital ships which subsequently arrived, or to the hospital that the English and American surgeons established at Taku; in her hospitable ward-room numberless refugees found aid and comfort, and the mess bills of her favored officers waxed ever greater.

At Tong-ku, which is the terminus of the Imperial Railway running to Tien-Tsin and Peking, we found several locomotives and many flat cars in the yards, and with these it was determined that a train should be made up which would be used as far as the condition of the road permitted. The train having been gotten ready and equipped by firemen from the *Monocacy*, our command, together with supplies and implements with which to repair breaks in the road, was embarked, and we started on our journey of 30 miles to the relief of Tien-Tsin. After having gone a short distance, we overtook a battalion of 400 Russians, and, our two commands joining forces, we pro-

ceeded to Chengliang - Cheng, a small station at which the Russians had established a fortified camp. We ascertained that the troops here had been without food for 36 hours, most of which time they had spent in repulsing repeated onslaughts of "Boxers." Having relieved their wants, the train pushed on until the road could be repaired no farther, when we disembarked, sent the train back and pushed ahead on foot. Arriving at a point about 12 miles from Tien-Tsin, a council of war was held, in which it was decided that we would bivouac for the night at that place and push ahead in the morning. In this council Major Waller's opinion that the force, being too small, should wait reinforcements, was overruled—the wisdom of his proposed course subsequently demonstrated itself.

Early the following morning, June 21st, the entire command, 530 strong, marched up the road, the Cossacks, a few of whom were with the Russians, doing the scouting, and at about 7 A. M., when we had arrived abreast of the great East Arsenal, fire was opened on us by a force of about 7000 Chinese, entrenched. The shooting of the latter was remarkably accurate, and had we not been covered in one direction by the railway embankment, the losses would have been immense. A brisk engagement ensued, in which the Boxer contingent of the enemy's force endeavored to advance upon us over an open field. In the face of a careful fire on our part, they continued to come on, losing many men, but waving their swords and banners frantically; finally, when they had gotten to within about 800 yards, our fire became so fierce and the demonstrations of the falsity of their theory of immunity so plentiful, that they turned about and ran—leaving their wounded, who continued to rise and wave their swords, only to fall again. An action between 7000 men and 530 could not continue long and could, apparently, have but one termination. Having held our ground as long as possible, and the Russians having commenced to retreat, we fell back, carrying our wounded by hand. The enemy pursued in force—infantry in the rear and cavalry on the flank—and there followed, for four hours, a retreating fight, in which a force that had been reduced to less than 500, embarrassed by their wounded, held at bay fifteen times their number, and finally beat them off, when hope seemed foolish. At 2 P. M.,

the little band arrived, without further molestation, at the Russian camp previously referred to, having marched 30 miles, eaten nothing, fought for five hours and saved its wounded from an enemy who is not merciful enough to take no prisoners, but saves them for amusement's sake. On this retreat, men, with the bones of their thighs broken, were carried in the arms and on the backs of their comrades, for a distance of many miles, when every movement caused the jagged edges of shattered bones to rub together and made the faces of the sufferers gray with pain—yet neither word nor deed ever once betrayed their agony, and the only request made by any was to the effect that if abandoned they must be, they be allowed to keep their rifles.

That evening our force was augmented greatly by the arrival of English, German, Italian, Japanese and more Russian troops, and with a command amounting to about 2000 men, we, on the following morning, again started for the concessions. Throughout our advance, the booming of heavy ordnance, being used against the foreigners, could be plainly heard, and the fear that the latter would be unable to withstand such furious cannonading, with its inevitable accompaniments, spurred on the lagging steps of men who were hungry, footsore and weary, and made even the blinding alkali dust, which the heavy wind hurled, in a steady storm, against us, and which cracked the membrane of our lips and noses until the not ever plentiful ditch water became a palatable drink, powerless to materially impede our advance.

On June 23d, by a succession of assaults, the Chinese troops were driven from one line of intrenchments to another, until the inner cordon which surrounded the beleaguered city was pierced, and the foreign troops entered, ragged and dirty, our men, as Major Waller in his report aptly puts it, "like Falstaff's army in appearance, but with brave hearts and bright weapons." The scene which lay before us baffles description—the town had been bombarded and subjected to heavy infantry fire for more than a week—the houses were riddled with bullets and shells—roofs were pierced, walls tottering, and no place safe, except a cellar—the streets were furrowed by shells, and Gordon Hall, the Municipal Building of the British Concession, was filled with women and children, whose homes had been

ruined or destroyed. Trade had ceased—men had given up their usual avocations for the all important one of fighting the common enemy. The river was filled with the bodies of Chinese, and the pontoon bridge, which was almost immediately thrown over it, had to be opened frequently to prevent a jam of these human logs. Even Gordon Hall, though less vulnerable, by reason of its immense stone walls, had been pierced time and time again, and persons having the temerity to sleep in the upper stories of an ordinary house enjoyed a large number of chances of their rest becoming an eternal one. To such extremities had the little band of brave women and fearless men been reduced that it had been tacitly agreed that not many more hours could elapse ere the former, with the children, must die at the hands of their own fathers, brothers or husbands, to insure their escaping a worse fate, while the latter would join them, after having made the last stand as expensive as possible for their hated besiegers. Small wonder that these people hailed our arrival with an enthusiasm scarcely describable and were generously willing to keep our men in one continuous state of hilarity and bliss, by means of gratuitous issues of Mumm's Extra Dry.

The situation was but little relieved of its gravity, however. Before I go further, it may be well to explain that the foreign settlements are made up of three concessions, lying on the Pei-ho River, of which the German is the most remote from, the English next, and the French nearest to, the native or walled city of Tien-Tsin, which latter is a mile or so from them. The native city is approximately rectangular in shape, and is surrounded by a wall built with embrasures for artillery, and pierced for small-arm fire. South of both the Walled City and the foreign concessions, and about one mile distant from the former, is the big mud wall of Tien-Tsin—a wall about 12 feet high and in places nearly as thick. On each side of this wall is a canal, and the ground lying between the wall and the native city is intersected by burial mounds and irrigation ditches. Now, to proceed with the situation—the work before us was briefly this: The Walled City must be stormed—the arsenals around Tien-Tsin, of which the East Arsenal was the most important, taken, and Seymour's column, from which

nothing had been heard, relieved, if it was not already destroyed. To attempt the relief of Peking with the force then at hand would have been but to invite disaster, not only to our command, but to everything we left in our rear. After we had been in Tien-Tsin a day word was brought in by a Cossack courier that Admiral Seymour's command lay besieged in an arsenal, distant about 8 miles from Tien-Tsin, which he had stormed and taken from the Chinese troops.

On the morning of the 25th, the advance was commenced to the relief of the English Admiral, and after comparatively little opposition, beyond considerable shelling from works we were compelled to pass *en route*, we beat back the besieging force and relieved the garrison of about 2500 men. Admiral Seymour's forces were like ours—composed of all nations. We found that he had arrived at a point very near to Peking, after having had several severe encounters with Boxer hordes, but without molestation from the Imperial troops, until the day the Taku forts were taken, when he encountered a large force of the latter, who attacking him, he was obliged to fall back before them. He retired in an orderly manner before the many times superior force of excellently armed Chinese, being almost constantly in action from that time until his arrival at the arsenal. The latter was rushed and taken, and in it large stores of ordnance, arms and ammunition were found, together with a place where his 200 wounded could receive some medical attention. Here he was laid siege to by the Chinese troops, and by turning his captured guns against them, was enabled to hold them at bay until our arrival. Shortly after we had come the Chinese attacked the joint forces, and it was not until we had advanced upon and driven them for a considerable distance that we could get a respite from their fire. Having driven them several miles back, we were at liberty to return to the arsenal, and after having thrown out outposts, to spend the time which must elapse ere we could improvise a sufficient number of stretchers to remove 200 wounded men a distance of 8 miles to the foreign concessions, in investigating the captured stronghold. This arsenal was built by Major Von Hannicken, formerly of the German army, who had for a long time been engaged in constructing works of that character for the Chinese,

and in training their troops—he, with his family, together with a colonel of the Russian service and a former Belgian officer, who had been similarly employed, were among those relieved by us at Tien-Tsin—the irony of fate.

The arsenal was constructed in a bend in the river and was surrounded by strong intrenchments. Here the Allies had mounted many Krupp, as well as machine guns, taken from the quantities of those found in the place. In the storehouses we found arms of every sort and description, from the latest model Mannlicher rifles and carbines, Mausers, Winchester and Lee straight-pulls down to Remingtons of the vintage of 1860 and Gingalls, the famous two-men guns. The latter it may be interesting to state, are guns of large calibre, more than one inch, and of considerable weight, which are fired by two men, one of them holding the weapon over his shoulder and the other sighting and discharging it; they make fearful wounds, but are, as may be easily imagined, rather clumsy weapons for modern warfare. In addition to small-arms, many Krupp and rapid fire guns of different kinds were stored in the arsenal, together with an immense supply of ammunition for them all, and such quantities of complete cavalry accoutrements as would be sufficient to equip a number of regiments. The marines and sailors from the U. S. S. *Monocacy* having exhausted their supply of ammunition for the Lee rifles with which they were armed, discarded the latter in favor of captured Mannlichers, and found the change a most excellent and beneficial one. Apropos of rifles, the Krag-Jorgensen, which has demonstrated its excellence in so many campaigns, more than lived up to its reputation. I have seen the breech mechanism covered with mud, and apparently hopelessly clogged, yet the application of a few handfuls of water, hurriedly dashed over it, served to cause it to operate as efficiently as ever. I have seen every part of it coated with alkali dust, which penetrates everywhere, and the shooting qualities of the arm remain uninterfered with.

On the night of June 25th, having filled our canteens from a little cove in which 14 putrid Chinese soldiers were carelessly floating, and having made a detail of 1600 men to carry the wounded, we prepared to return to Tien-Tsin. Before doing so, trains were laid to the magazine and arm and ammunition houses,

whose precious contents we had no means of removing, and after the forces were well clear of the vicinity the buildings were fired, and one of the finest military store-houses, which China had been industriously equipping since the disastrous Japanese unpleasantness of 1895, went up ignominiously in smoke. Having returned to the Concessions, Admiral Seymour, being the senior officer present, assumed direction of affairs. By an agreement of the representatives of the Powers, Captain Edward Bayly, Royal Navy, was made provost-marshal, and I deputy provost-marshal, with the understanding that this should not interfere with my military duties. On June 27th, a force composed of 1800 men, the major part of whom were Russians, with detachments from the American, English, German and Japanese forces, took the famous East Arsenal, garrisoned by 7000 Chinese troops, and which had proven the stumbling block in our way on our first advance of June 21st. Here enormous supplies were found, and the Russians decided to garrison and hold the place, their forces having been greatly augmented and General Stessel having taken command. A graphic though flowery account of the engagement is contained in the general order subsequently issued by the Russian general, which follows: "By the aid of God, and the bravery of my troops, and those of other nations, viz., German, English, American and Japanese, we yesterday succeeded in taking by storm a stronghold of Tien-Tsin known by the name of the East Arsenal. Neither the open plain, covered by frightful, hostile fire, nor the ditches filled with water and soft mud, nor the steep walls, were able to stop the advance of the brave storming party, which only would be ordered to cease the pursuit of their task when the enemy fled in all directions. Hurrah! To you brave comrades, there is nothing impossible. The Lord, our protector, will show us the way to other victories and glory. On my part, as chief of the expedition, I wish to express to you my heartfelt thanks and my congratulations on the wreath of laurel with which you have decked your glorious colors anew.

"STESSEL, Major General."

From this time until the 11th of July followed guard duty of the most arduous nature, broken by frequent reconnoissances in force and expeditions with different objects in view. The Race

Course, a Chinese stronghold, was taken, and the South Arsenal captured by storm, the American marines and Japanese being the first within its walls. Here further quantities of guns and stores were found, and with this capture the last of the several works before us, which was feasible with the force at hand, was accomplished.

There remained now the taking of the Walled City, and the relief of Peking. While awaiting reinforcements, many different problems had to be worked out. The Concessions were being constantly fired upon and the rain of shot and shell knew no cessation day or night. The troops were quartered in immense "Go-downs" or storehouses—men were being killed in them every day—one shell burst among the British marines, killing four and wounding ten; incendiarism was rife; a large sugar warehouse was fired near our quarters, the China Merchants' Steam Navigation Company's building, threatening to spread indefinitely and only extinguished after untiring efforts on the part of the English, Japanese and ourselves; the German concession was having one conflagration after another—ever-busy spies among the apparently friendly Chinese had to be sought out and dealt with—the efforts of the never tiring "Sniper," as the Chinese sharpshooter was denominated, had to be circumvented and repaid in kind. To preserve the sanitary conditions of the town—a most difficult problem under peace conditions—became well-nigh impossible. Dogs, which are the only thing more plentiful than natives in China, were becoming rabid from their feasts on human flesh, and no sight was more common than the spectacle of representatives of this type of degenerate, shaggy cur, tearing dead men limb from limb. During this entire period, from June 21st until July 11th, the United States forces in China consisted of 132 marines. They had taken part in every engagement, expedition or reconnoissance, had marched 97 miles in the first five days, had lived on one meal for six days, and yet were ever cheerful and willing. The high opinion which foreign officers entertained of them was never more forcibly testified to than in the letter of General Dorward, of subsequent date, who finally commanded the British forces. He wrote: "I desire to express the high appreciation of the British troops of the honor done them in serving

alongside their comrades of the American forces during the long and hard fighting of the 13th instant, and the subsequent capture of Tien-Tsin City, and of my own appreciation of the high honor accorded to me by having them under my command. The American troops formed part of the front line of the British attack, and so had more than their share of the fighting that took place. The ready and willing spirit of the officers and men will always make their command easy and pleasant, and when one adds to that the steady gallantry and power of holding on to exposed positions, which they displayed on the 13th instant, the result is soldiers of the highest class." On July 11th, the 9th U. S. Infantry and the remainder of the 1st Regiment of Marines arrived, and I resumed the duty I had been performing in the Philippines—that of regimental adjutant of the latter command. On the 12th, a council of war was held, in which it was decided that the Walled City must be taken, even though the number of troops at hand, it was generally agreed, was insufficient. On the morning of the 13th, our command marched out of its barracks at 3 A. M., and passing through the Taku gate, formed with the English and Japanese in two columns. These columns then marched on a line parallel to the great mud wall, which, as I have once before said, was about one mile south of the Walled City, and running parallel to it. The orders contemplated a meeting of the commanders at a point near the South Arsenal, where detailed instructions for the joint attack would be given. The assault from the south was to be made by a combined force of Americans, English, Germans, French and Japanese, while the Russians, having a number of troops equal to those of the other Allies together, were to attack and carry the three forts and enter the city from the north side. The Allies, approaching from the south, came under fire at long range, and the troops were hurried into action without the previously mentioned meeting ever being held. The line formed up back of the mud wall, the artillery opening fire on the enemy, who were keeping up a rattling fusilade. The guns of the various commands were posted in the South Arsenal and at points along the wall adjacent thereto, their immediate duty being to silence the 4.7 and 6-inch guns of the Chinese, which were making the place almost unbearably warm,

and to batter in the south gate of the Walled City. A battery of 12-pounders and 4-inch guns, from the British ship *Terrible*, had been previously mounted on the mud wall. These guns were the same ones that had acted so splendidly in the relief of Ladysmith and bore on their carriages the significant inscription "From Ladysmith to Peking"—their lyddite shells did fine execution in this action.

The artillery duel having been carried on for some time, the order came from General Dordard for the marines to cross the mud wall and advance on the city, having as their special objective a battery of 4.7-inch guns, with which the enemy were making matters more than disagreeable. The plain lying between the mud wall and the wall of the city was intersected with burial mounds and small irrigation ditches—with the exception of this insignificant protection there was no cover to be had—and the only method of crossing this zone, which was constantly swept and ploughed by a storm of bullets and shells, was by advancing by rushes of 50 or 75 yards, and then lying down to recover breath and open fire. We advanced thus to a line of trenches about 800 yards from the enemy when word came to hold what we had, the rest of the line not having succeeded in pushing ahead so far. This was much more easily said than done, as in addition to the heavy fire which was being poured upon us, the Chinese troops endeavored to flank us twice—advancing on the run and almost succeeding in gaining our rear on one occasion—these instances effectually demonstrating the falsity of the doctrine that Chinese will never charge. Had these flanking movements not been successfully resisted, the whole line, taken in flank and rear, and outnumbered by the troops with whom they were engaged by probably ten to one, must inevitably have been cut to pieces. At about 5.45 A. M., one of the lyddite shells from the British battery struck and exploded the Chinese magazine in the city, the column of smoke and men going up a thousand or more feet into the air, and the shock being plainly felt a mile and a half away. In the meanwhile, the British, Japanese, French and German troops and the 9th U. S. Infantry, on our right, had advanced as far as practicable, and almost the entire line being fronted by swamps, the only solid ground running to the front being a narrow roadway,

it was impossible to continue without first silencing, to some extent, the fire of the Chinese. The 9th U. S. Infantry held the right flank of the line, hence both flanks were left to the care of American troops. In its position on the right the 9th was being terribly cut up, and word was sent back to General Dorward requesting reinforcements. In response to this, the artillery battery of the Marine Regiment, having exhausted its ammunition in its well directed efforts against the town, was sent forward as infantry, to support the 9th. Throughout that long day the conflict went on. There were about 6500 of the Allies, and, as Colonel Meade in his report aptly puts it, "the Chinese had 60 guns and their forces were variously estimated—nothing being correct—but there was a large army of Imperial troops and Boxers."

At 2 o'clock on the next morning the South gate of the city was blown in and the troops entered the town, the enemy having evacuated and moved toward the west under cover of darkness. The city was filled with dead and dying Chinese and the bodies of animals. The Russians entered from the north, and Tien-Tsin was the property of the Allies.

In order to come to some conception of what had been accomplished by the allied forces, it will only be necessary for me to describe the fortifications and approaches of the city. The latter is surrounded by a wall, built to a height which makes scaling impossible, and composed of a facing of three feet of masonry backed by about 30 feet of solid earth—a fortification proof against artillery fire at all ranges. This facing extends above the earth backing a distance of about 6 feet and is pierced with loop-holes and embrasures. The south entrance is through a double gate, and troops having penetrated the outer entrance would be subject to a murderous fire from above until the inner gate should also be breached. The position of the city from a strategic standpoint is an excellent one. In front of the south wall is an unfordable moat, and fronting that are marshes which have various depths at different points. As has been said, the only entirely solid ground over which the wall can be approached is a roadway running from the south arsenal to the south gate. The defenses were planned by "Chinese" Gordon—Gordon of Khartoum—and their excellence would en-

able a small force to hold out against an army corps, if proper dispositions were made.

A temporary government was immediately established for the native city, having as its head a board of officers, on which the various powers were represented. Major Luke, of the British Marines, was made chief of police, and the Allies sent details for police duty.

The following proclamation was then issued by Major-General Stessel, the Russian Commander-in-chief, and approved by the senior officers representing the Powers :

"TO THE INHABITANTS OF THE CITY OF TIEN-TSIN :

"In bombarding the city of Tien-Tsin, the allied forces only replied to the attack made by the rebels on the Foreign settlements.

"At present, as your authorities, forgetting their duties, have deserted their posts, the allied forces consider it their duty to establish in the city a temporary administration, which you all have to obey. This administration will protect every one wishing to deal in a friendly manner with foreigners, but will punish without mercy every one who causes trouble.

"Let the bad people tremble, but the good people should feel reassured and quietly return to their houses and begin their usual work. Thus peace will be restored.

"Respect this.

"Tien-Tsin, the 16th July, 1900."

Having received what came very near being my quietus in storming the walled city, I lay in a field hospital in Tien-Tsin, hovering between life and death, while the march on Peking was being executed. Men who were in the advance tell me that there was little fighting of any importance after Tien-Tsin fell. The heat, however, throughout the entire campaign was intense, and the forces, having frequently but little food, suffering from thirst and great heat, and constantly on the march, endured on the Peking trip, as before, hardships difficult to describe. Of the relief of Peking and the situation there, I know no more from actual experience than do my readers.

Now a word or two concerning the man we have been fighting. In this war many theories with regard to the despised Chinaman have been exploded. The fact that he can and will fight

is the most prominent of them, and the idea that he will not charge, another—he has done both of these things. China has for the last five years been going through considerable of a military renaissance. The Japanese war taught her that, though she might despise and hate the white man, with his ridiculously young institutions and religion, she could not spurn his military sagacity and destructive inventions. So foreign officers are sought after and highly paid—foreign engineers build her forts and arsenals—foreign concerns make and sell her arms—and settling down to real business, though on a proportionately small scale compared to her resources, she decides to profit by these things. The improvement that has been made is amply demonstrated by the fact that these men, who a few years ago fought with spears, bows and arrows and tom-toms, fired modern rifles and great guns with an accuracy of marksmanship which more than surprised every officer engaged against them, including their former instructors. In every case of the panic-stricken rout of the Chinese in the late trouble the inspiring cause of it was the anxiety of their officers to save their own precious skins which caused them to depart precipitately when the Allies came at them with a charge and a yell; the best of troops have been known to break when deprived of their leaders. Apropos of Chinese, it may not be uninteresting to state that, when the military college at Tien-Tsin was attacked by the foreigners on the outbreak of hostilities, the cadets, though outnumbered and cornered, fought until the last, being killed under beds, in which positions they refused to surrender and were taking final shots at the enemy. What a man will do as a soldier, who looks forward to death as a consummation greatly to be desired, in that his condition is at present as bad as it could possibly be, and who hopes for, and is taught to expect, the best, in a subsequent world—who can live on a handful of rice, drink dirty ditch water without any evil effects, sleep in the mud and stand the greatest of fatigue—what this man will do when excellently armed and trained and well led by competent officers, is a question pregnant with possibilities. What a hundred million of them will do, under like conditions, is a matter which it is not pleasant to contemplate.

PERSONAL REMINISCENCES FROM THE CAMPAIGN
IN THE ORANGE FREE STATE IN MARCH, 1900.*

BY CAPTAIN CARL REICHMANN, SEVENTEENTH INFANTRY.

AFTER the British occupation of Bloemfontein, the Boers in the Orange Free State were much dispirited. They were not united by the firm bond of discipline; they were worn out by long and arduous field service, and, what was worse, they were thoroughly homesick. The Boer is fond of family life and of his lonely farm, and it is hard for him to stay away from them any length of time. So it came that many went home from sheer homesickness, others because they were tired of war and thought they had done enough. The Boer forces confronting the British in the Free State were dwindling and had to be augmented, chiefly by troops withdrawn from Natal.

Between March 10 and 20 all expected to see masses of British mounted troops sweep the plains of the Free State as far as Kroonstad, and grave apprehensions were felt for the safety of those troops who had been operating south of the Orange River under General Lemmer, Olivier and Grobler. General Joubert was making strenuous efforts to organize resistance to the invader and to revive the flagging spirits.

As the days wore on and the expected northward rush of the enemy did not materialize, when it was learned that the commands of Olivier and Lemmer had safely reached Ladybrand after an arduous retreat of some twenty days, and that the British army had reached Bloemfontein in a state of exhaustion and destitute of supplies, the Boers decided that there was still a good fighting chance for them. General De Wet remaining north of the Modder River was keeping careful watch over the enemy in the former capital of the state. Presidents Steyn and Kruger held a great council of war at Kroonstad, the new capi-

*Captain Reichmann was the military observer for the U. S. with the Boer forces.

tal of the Free State, in which many officers and a large concourse of people participated. It was here decided to abandon the purely defensive tactics heretofore pursued, and to make quick, sharp dashes at the enemy's outlying troops and at his communications. As soon as he had received some reinforcements, De Wet prepared to carry this new policy into effect, and thus began his career as a bold raider that has brought him immortal fame.

In the latter part of March the military attachés were at Kroonstad, with the exception of Lieut.-Col. Gourko of the Russian General Staff, and Lieut. Thomson of the Dutch army.* On March 26, President Steyn informed us that General De Wet would soon embark in some enterprise, and if we desired to join he would give us a special letter to the general, who was then at Brandfort, a railway station about forty miles north of Bloemfontein. Lieutenants Asselberg and Nix of the Dutch Indian army and myself immediately embarked with our horses and three days' tinned provisions, on a special train going south. As the Vet River bridge, five miles south of Smaldeel, had been destroyed in the first panic after the fall of Bloemfontein, the train did not go beyond Smaldeel. There we found a Dutch railway ambulance which gave us food and shelter for the night. Next morning we started early and reached Brandfort at three in the afternoon after a hot ride of thirty miles. In the evening we called on General De Wet who received us very kindly, took us into a room and confided to us that on the evening of March 28 he would march in the direction of Bloemfontein with one or more columns, and that he would be glad to have us join him. His brother, Piet De Wet, returned our call. On our way in we had seen several commandoes bivouacking in the vicinity of Brandfort, but had been unable to estimate their strength. Some one told us that De Wet had 3500 men and 28 guns.

On the evening of March 28th Major Demange, the French

*On the retreat from Poplar Grove, March 7, 1900, Col. Gourko's wagon broke down, and as no other transportation was available, he decided to remain with his property, await the British and ask their commander for a new wagon and for permission to rejoin us by the shortest route. Lieut. Thomson remained with him. These two officers were sent by the British authorities to Cape Town via Kimberley, and were eventually permitted to rejoin us via Delagoa Bay. They were gone a month before they rejoined us at Brandfort.

attaché, and Captain Allum, the Norwegian attaché, arrived from Smaldeel bringing with them a light wagon, and also our official guide, Mr. Rickert, a grandson of President Kruger. They stated that they would follow us as soon as their horses had food and rest. Before the march began about 800 of the Boers rode into the town and marched in review before General De Wet in column of twos, the rifle at the advance and presenting a martial and formidable appearance; they were in high spirits and were cheered by the inhabitants of the sleepy little village. They did not know whither they were to go, but as practically each man had a spare horse and as there was no wheeled transportation, they felt that they were to be led to some bold enterprise.

When the time came to saddle our horses we found that some one had relieved them of their halter straps. Leather at this time was unobtainable in Brandfort, and for that matter anywhere else. In looking through the depleted stores of the village in the course of the day I had discovered and purchased the last two coils of clothes line which now came in handy much sooner than I had intended. The delay incident to these repairs quite belated us, General De Wet had gone and we were to join him on a grassy plot east of the railway station. When we arrived there, we encountered a large mass of mounted men, and were unable to find the general. It was intensely dark and we had difficulty in keeping together. Our led horses persisted in running around us in a circle and finally broke loose, and in searching for them we became separated from each other. It was not long, however, before some Boer called out that he had caught a stray horse, and then another, and a third, and before long we had our horses back and were together again. In the meantime while we were swearing about the horses, one of the Boer commands was singing hymns, and when the crowd finally moved we moved with it, forging ahead whenever we could until without knowing it, we rode in rear of the advance guard. At 1.30 A. M. the Boers in our front halted and unsaddled; we halted where we were, unsaddled and hobbled our horses, tied them two and two together and turned them loose to graze. As the commandant commanded "Go to sleep, burghers," we laid down among them in the grass. At the first peep of dawn the

order came "saddle up," and in five minutes we were on the road again. Being hampered by my spare horse, which would not lead and had colic, we fell behind and wondered why we did not see anything of the big column that had marched out of Brandfort. After riding some miles we passed a farmhouse the inhabitants of which hospitably invited us to a cup of hot coffee, which was gratefully accepted. On resuming our march we saw some Boers camped in the grass on either side of the road who could not tell us anything of the whereabouts of De Wet. Before long we met the German ambulance which had maintained a hospital at Jacobsdaal, near Kimberley, had fallen into the hands of the British and was now *en route* to rejoin the Boers. The surgeon in charge was Dr. Küttner, whom I had met five years before in Germany, and who is surgeon-in-chief of the German expeditionary forces in China. When he returns to Germany a chair of military surgery will be established for him at the University of Berlin, I am told. He told me that no Boers were in our front, and at 7.30 A. M. we halted on the high ground between Kliplaat Drift and Os Spruit. Although we had a good view over the country, not a soul was in sight. Finally a solitary unarmed horseman approached from the south, whom we proceeded to question without, however, eliciting anything but information of the lay of the land. So after making a meal of a tin of mixed meat and vegetables,* and abandoning my spare horse in the throes of death from colic, we retraced our steps to Kliplaat Drift, where we found a Boer outpost established. At the farm house nearby we were entertained with bread and butter and tea and toward noon General Frohnemann came along, who informed us that during the night General De Wet had changed his mind and direction of march, and that he now was in bivouac at the farm of Martinus Grobler, some six miles to the north. In General

* In South Africa I became acquainted for the first time with conserves of Dutch manufacture. A tin usually contained one kind of meat and from two to four kinds of vegetables. There was no gravy or soup in it; the entire tin was packed solid with meat and vegetables, and the contents looked appetizing and were most palatable. They were well seasoned and had none of the peculiar flat taste similar articles frequently have. Altogether they were the best tinned provisions that I have tasted anywhere before or since. They were expensive, however, and we paid as much as 75 cents for a 2-pound tin.

Frohnemann's company we reached the main column about 1.30 P. M. ; the men were lying in the grass under sun-shelters made of their saddle blankets, for there was very little wheeled transportation and General De Wet's little wall tent was the only one in sight. As we approached to announce our arrival to him he had just seated himself on the ground with his staff and was invoking a blessing over a mess of boiled mutton and potatoes. At this bivouac we found Major Demange, Captain Allum and Mr. Rickert, who had left their wagon at Brandfort and had reached General De Wet a few hours before us. Otto von Lossberg, a German-American, who commanded a Free State battery, was also there with his guns. No one knew where we were going to go and De Wet was cold and uncommunicative. At 3 P. M. a council of war met, in which there was much wrangling because one of the commandants had, contrary to the President's orders, brought his wagons along and refused to send them back. General De Wet settled the matter by calling for the culprit's resignation and ordering the election of a new commandant. There was also some concern because a British patrol had been reported in the vicinity. De Wet plainly was anxious to conceal all of his movements from the enemy. He had marched from Brandfort at night. Instead of marching by the most direct route he selected a circuitous one along the northern foot of a range of hills, which constituted a screen between himself and the enemy ; then he changed the direction of march during the night, and was now bivouacking in a dip of the ground which could not be looked into from any direction from a distance. We thought at the time that being far out in front that day, and dressed in khaki, we might have been the innocent cause of the report about a hostile patrol.

At 5 P. M. the command to saddle up was given, and in a very few minutes everybody was on the march. Column was formed and when all were in their proper places we came to a halt and dismounted to allow darkness to overtake us before crossing the crest in our front (south), so as to prevent the cloud of dust raised by the column from being observed by the enemy. After dark we started for Os Spruit, via Kliplaat Drift, where we had been in the morning and where we now left a second spare horse that could go no further. About 11 P. M. we arrived

at the farm of Mr. Marais on Os Spruit and tucked ourselves away for the night under the lee of a friendly garden wall. Next morning we bought food for ourselves and oats for our horses from Mr. Marais, and awaited events. We were again in a hollow, sheltered from all hostile observation. In the afternoon there was a divine service with singing of hymns. About 5 P. M. column was formed and again we waited for darkness before crossing the high ground to the south. At the head of the column rode General De Wet with his staff, followed by an advance guard of fifty Boers, then came the attachés with their guide, followed by the rest of the column. Orders had been given not to smoke or strike matches and to observe silence. About 9 P. M. a scout came in from the south and reported to General De Wet, who immediately halted the column and called his commandants together for a council of war in a nearby farmhouse where we were able to buy a loaf of bread. A half an hour later the march was resumed and continued at a 6 miles an hour gait until we reached the banks of the Modder River about midnight. We were joined by the scout just mentioned, who was a German ex-officer and stated that he had left Thaba N'chu at 2 P. M. that day, that there were 6000 British troops with a train of 200 big wagons there, that a garrison of 200 men was guarding the Bloemfontein waterworks at Sanna's Post, and that General De Wet intended to capture the wagon train and the 200 men at Sanna's Post. At the Modder River we waited about an hour until the scouts returned and reported the road safe. Up to this time, notwithstanding the general's injunctions, the Boers smoked and lit matches freely, but after crossing the river, we moved more slowly and in absolute silence, and gave no outward sign of our presence. At 4 A. M. we reached a creek where a halt was made; in the distance we saw camp-fires and were informed by the guide for the first time that it was the enemy's camp at the waterworks. We were taken to Klip Kraal, a farmhouse about 250 yards above the crossing of the creek, where we found General De Wet, who though as a rule, a very reserved man, had a merry twinkle in his eye and gave us a friendly nod. Incidentally we learned that the Boers were taking positions along the creek and that we were going back there at 5 A. M., which we did, after a cup of hot coffee and a stout piece of bread and but-

ter, a most acceptable gift from our farmer host after the long ride through the chilly night.

The house where we were resting and eating stood on a rise of ground on the left bank of Koornspruit, which pursues a general northerly course and empties a few miles below (north) into the Modder. This river here changes from a northerly to a westerly course, by a sweeping curve. The little rise on which Klip Kraal stands, recedes from the house westward for about 75 yards, then turns to the north for about 250 yards, leaving between it and the creek a little flat not more than fifty yards wide. The road from Bloemfontein passes between Klip Kraal and some stone enclosures situated at the bend of the ridge, descends into the little flat, crosses the creek, runs across the plain to the Modder River Crossing at Sanna's Post (Bloemfontein waterworks) about $2\frac{1}{2}$ miles distant and continues eastward to Thaba N'chu. In their upper courses Koornspruit and the Modder River are separated by high hills from which a long, gentle slope descends into the bare flat along the lower course of Koornspruit. This slope closely follows the left bank of the Modder River, which is considerably higher than the right. After traversing this slope or swell the road descends steeply for 200 yards into the river and gains the opposite side by a still steeper ascent deeply cut into the right bank, which is about forty feet high. This crossing of the Modder constituted an important defile, and was quite a serious matter for a large wagon train. There were not more than 18 inches of water at the river crossing, and not more than six at the creek crossing. The Bloemfontein water works, with a few houses, stand on the left bank of the Modder close to and south of the road.

When we reached the crossing of the creek at 5 A. M., the Boers were lining the further (right) bank and their horses stood behind them, next to the water, tied together in rows and sheltered by the high (15 feet) and steep bank. A half dozen men occupied the stone enclosures near the house and some twenty men were under a group of trees opposite the house on the right bank. We learned at this time that of the 1500 men that had marched out of Brandfort, but 400 had followed De Wet and that the rest under the general's brother, Piet De Wet, and the artillery numbering 5 field guns, 1 Maxim Nordenfelt

and I hand Maxim, had left us ten miles north of the river and were operating to the east of us. General De Wet, rifle in hand, took post in the road, under the shelter of the bank, and gave orders to the men to keep concealed and not to open fire until he himself had fired the first shot. This order was repeatedly passed along the line. The general desired the attachés to take post immediately behind him, but there was not room there for us and our horses, and we divided. Captain Allum and Lieutenant Asselberg found places among the Boers under the right bank, about 30 paces above the crossing; Major Demange, Lieutenant Nix and myself took post opposite them on the left bank, which was a little higher and afforded a better view, while a bush furnished convenient concealment. As we were lying behind our green cover, facing eastward, we had 200 yards to our right the farmhouse, behind us the little flat and beyond it the small rise before mentioned. Our horses and Major Demange's black servant were down in the bottom of the creek between us and the house. In front of us were the Boers under the right bank, beyond lay a perfectly flat plain from which, near the Modder, rose the long gentle swell before mentioned. As the light grew brighter we saw on this rise of ground a large brown square out of which rose a tall smokestack, and at the upper end of which some conical tents were discernable. In the plain, 1200 yards to our right front, stood three lonely houses. We took the square to be an enclosure of the waterworks and the tents as those of the garrison. As a matter of fact, the waterworks were lying on the eastern slope of the swell, and with the exception of the smokestack were invisible from our point. From what we had been told, we expected to see that wagon train coming from the direction of Thaba N'chu pursued by Piet De Wet and running straight into our arms, and we strained our eyes through our glasses to catch the cloud of dust that would herald its approach. Meanwhile a solitary horseman came riding along from the direction of the waterworks, and held a conversation with De Wet. The sun rose bright and warm and yet there was no sign of a wagon train, and we were speculating whether we would have to lie there in the sun all day, when suddenly, about 7 A. M., on the slope of the hills east of the Modder, we saw the smoke of two guns and heard the peculiar "crackling" sound of the

Free State Krupp guns using black powder. We could not see the shells strike ; after a few rounds the guns became silent and then reopened fire from a point 1000 yards nearer (the range now was 4700 metres). We saw the shells burst in or near the brown square which became full of life.

The actual situation was as follows: the British General Broadwood had been sent eastward from Bloemfontein to operate, I suppose, against the Boer forces that had made good their retreat to Ladybrand from the south. On learning the strength of the enemy he withdrew to Thaba N'chu. Hearing of the approach of the Boers and of De Wet's movements, he decided to place himself within supporting distance from Bloemfontein and telegraphed to the Commander-in-chief at Bloemfontein, who started an entire division, and I believe one or two cavalry brigades to his support, early on the morning of March 31. General Broadwood left Thaba N'chu after nightfall on March 30, to place the difficult defile of the Modder River between himself and the enemy. This command of about 2000 mounted men, with two horse batteries and the wagon train of about 150 wagons, had reached the left bank of the Modder late that night, and the brown square we were observing was the wagon park. Being now attacked from the east, with the difficult river between himself and the enemy, he might expect to be able to gain time for his wagon train to get away, by defending the defile—provided the road to Bloemfontein was unobstructed.

After the artillery fire opened, several private carriages detached themselves from the brown square and drove rapidly toward us. They were allowed to come down into the bottom of the creek ; then the passengers were made prisoners, and in order to avoid suspicion on the part of those coming behind, some Boers seated themselves in the carriages and drove them to Klip Kraal where the horses were unhitched behind the buildings. The British troops were seen falling in and moving southward to get out of range of the Free State guns. The brown square gradually dissolved into a long string of trek wagons ; infantry fire could be heard on the banks of the river where the garrison of the waterworks was probably engaging the Boers on the right bank.

On our side so far everything was quiet. Among the passen-

gers in the private conveyances heretofore captured, there had been one British officer. The wagon train was steadily coming on under clouds of dust and not a single patrol or scout preceded it. So far as my observation went, there were no soldiers at all with the first six or eight wagons, which were of the lighter kind, contained the baggage and were somewhat in advance of the others. These baggage wagons were taken over the crossing and parked on the beforementioned little flat on the left bank of the creek.

At last the heavy wagons were approaching, drawn by from 8 to 12 mules each and on most of the wagons sat one or more soldiers facing to the rear to watch events there and wholly unconscious of their own danger. General De Wet now stood up in plain view and called and beckoned to the British soldiers to "come in." They were taken entirely by surprise and came in and were put away in a safe place under the high bank north of the crossing. As the wagons approached, one after another, the general called to the soldiers "come in" and directed the wagons to pull to the right and left of the road. It seemed as though De Wet was going to capture single-handed the entire train and I can still see him standing there in the road with his rifle at an order in his right and with his left in the air beckoning "come in." Not a shot was fired and everybody kept concealed. This thing kept on for fifteen minutes or more, and soon there was a considerable number of wagons at the crossing lying helplessly under the rifles of the Boers, the number of prisoners under the bank of the creek was increasing rapidly, and the string of wagons still coming on, extended all the way back to the British camp. Considering concealment no longer necessary, we stood up, walked over to the prisoners and took some snap shots of them.

The accumulation of the wagons at the creek seems to have warned the British commander that something was wrong, for about twenty minutes after the farce began a company of mounted infantry came galloping down toward the creek, keeping on the south side of the road. Meanwhile we had resumed our former position and were standing beside the bush. The company halted about 50 yards in front of us, dismounted and stood, rifle in hand. General De Wet, and five or six Boers

on the opposite bank, called to them "come in," and a few of the foremost threw down their rifles in disgust and came in. Then there was a pause. At this time I saw a British officer on horseback ride away from De Wet and some British guns about 200 yards in our front, south of the road, and on looking through underneath the wagons I saw some more on the north of the road. This line of march was obliquely across that of the wagons. The movement of this artillery (two horse batteries) was long a mystery to me until I learned from prisoners at Waterfal that the batteries had marched parallel to the train north of the road, and that finding the crossing blocked and the open space narrowed by a bend of the creek, they were in the act of passing through the train to the other side of the road where a large open plain spread out.

A few seconds after I saw the British officer ride away from General De Wet, the British troops in our front remounted rapidly and rode away, and as soon as this intention was apparent the Boers opened fire. I was told a few hours later by Mr. Rickert, our guide, that he stood directly behind General De Wet, that the general called the British officer to him and through Mr. Rickert, as interpreter, told him that he and his men must surrender or be killed; that the officer rode back to his men and gave the command to fall back, and that thereupon General De Wet shot the officer off his horse, and the signal being thus given, the Boers opened fire. The retreating mounted infantry was covered on its left by the wagon train, but they were in plain view of the Boers immediately in front of us, and perhaps fifty of them opened fire, first on the mounted infantry, and when they were disposed of, on some guns which were retreating toward the three houses. Five guns, slowly and successively, reached those houses and came into action. The teams of the remaining seven guns were shot down and of one battery the entire personnel was captured with the exception of the commanding officer and sergeant-major, I believe. The two batteries had been taken completely by surprise and seven guns were lying helpless by the side of the wagon train. The Boers in our front on the opposite bank, the half-dozen men in the stone enclosures near Klip Kraal, and those under the group of trees, sustained a slow fire against the guns. The fire

along the Modder River was getting more distinct and seemed to proceed slowly farther and farther south. Meanwhile, the British troops whom we had seen withdraw out of range of the Boer artillery, spread in a long line across the space between the river and our creek and then seemed to break up into groups, most of which took a westerly direction, to get into our rear, I suppose. The first British gun opened fire about 8 o'clock and the shell came right over the creek where our horses were standing. The horses as well as the black servant immediately stampeded; they came up the bank to the little flat and as they ran up the little ridge behind us a second shell accelerated their flight. Our first idea was that we would have to walk back to Brandfort many a weary mile, and with one accord we ran after the horses and were probably the only men on the Boer side visible to the British gunners and came in for a fair share of their fire, but we got our horses back. All this trouble and worry about our mounts we might have saved ourselves had we known that the Boers had several old men in rear whose sole duty was to catch runaway horses, and, in fact, our horses ran away several times more that morning and each time were promptly brought back. The black servant was riding one of Major Demange's horses with a new fair leather saddle equipment fresh from Paris. The black man and his horse were stampeded a second time by a shell, and when last seen they were going *ventre à terre* on the road westward (toward Bloemfontein) which by this time was no doubt occupied by some of the British troops. The fire of the six Boers who were visible in their stone enclosure and the appearance of ourselves and of our horses on the slope of the little ridge may have induced the British to believe that that little rise was the main Boer position, at any rate they kept firing at it. Major Demange and Lieut. Nix having secured their horses, tied them to a wire fence in a dip back of the ridge, and went to a point a little farther north where a few boulders afforded convenient seats and a conspicuous target. I went back to the crossing to watch proceedings there, leading my horse which had dropped the saddle on the edge of the ridge where it lay a conspicuous black object and the untouched mark of numerous shrapnel. My horse was so excited that I could do nothing with him, so I

took him over the hill, tied him to the wire fence and proceeded to rescue my saddle from its predicament. In going for my saddle I saw Major Demange and Lieut. Nix seated on the boulders referred to, several shells came their way and burst short until one burst about five yards in front of them. Having recovered my saddle, I rode over to Major Demange and Lieut. Nix and found the latter lying severely wounded behind a boulder. As I started to ride up the hill, six mounted Boers passed me who had been directed "to shoot back," a squadron of lancers approaching from our rear (from the west), and they did it. Ten other Boers had been detailed to meet two other squadrons of lancers north of us on the right bank of the Modder, and who evidently meant to attack the Free State artillery. I was unable to see these squadrons with my glass, the Boers watched them with the bare eye and soon decided that it was not necessary to go there "as the artillery was already shooting them back." I knee-halted my horse to let him graze, but he was very excited, the clothes line doing duty as halter-strap was not strong enough. He promptly broke it and ran away again.

The infantry fire along the Modder River was getting stronger and kept on extending to the south. The Boer artillery kept up its fire on the British troops on the Modder, the five British guns were still sweeping our ridge and the Boers in the creek below were keeping up a slow deliberate fire at the British gunners.

On my arrival at the boulders I took charge of the wounded lieutenant, and Major Demange rode off in quest of a doctor. Lieut. Nix had been hit in the neck by a shrapnel ball from above, just inside the right collar bone, and the ball in its course had evidently injured the spine, for before long paralysis set in. The boulders barely afforded shelter for two, we were consequently in a very cramped position, the British shrapnel were still coming, the range was only 12-1300 yards and had been accurately found. Fortunately, the fire on our boulders ceased before long and was directed against the Boers in the creek, the British gunners having evidently come to the right conclusion as to where the Boer fire was coming from.

Meanwhile I was in distress about Lieut. Nix. He was a

bright young officer who had seen active service in the Dutch Indies and had endeared himself to all of us. I had my first aid package with me, a little water in my canteen and an ounce of whiskey, but owing to the location of the wound and Lieut. Nix's paralysis I was unable to dress the wound unaided. The bleeding had stopped, his extremities were getting cold and his pulse was imperceptible. After taking the whiskey he revived and I cheered him up, but he felt he was mortally wounded, confided to me his last messages to his wife and children, and then prepared to die like a soldier.

About ten A. M. the British artillery became silent, some dismounted men came forward near the three houses and under the protection of their fire the guns slowly withdrew and soon afterward the British could be seen withdrawing at full speed from all points, hotly pursued by the Boers.

Von Lossberg, so he told me at noon, had strict orders not to take his guns across the Modder, and when he saw the British in full flight he and his gunners threw themselves on their horses, left their guns, and joined in the pursuit.

As soon as the British were seen retreating, the prisoners were formed in column and marched off, the guns were horsed and sent along the road, as were the unbroken wagons. When I reached the plain beyond Koornspruit an hour after the close of the action, nothing remained on the field except perhaps a dozen broken wagons, a British ambulance, a few dead horses and mules and a Kaffir driver whom a stray bullet had caught in the head.

Major Demange returned near 11 A. M. without a surgeon. The Boers had no surgeon with them and the nearest ambulance was six miles away. There was only one surgeon on the spot and that was a British surgeon, who together with his outfit had been caught with the crowd and he had his hands full with Boer and British wounded. In his quest Major Demange had gone to the place of the British camp and had made booty of a tin of biscuit, one of tongue and of some ladies underwear, which proved useful in bandaging Lieutenant Nix. Captain Allum and Lieutenant Asselberg had quitted their position on the right bank when all was over and came up to the boulders together with Major De-

mange. We now dressed the wound of Lieutenant Nix, and considered the question of how to remove him. A Boer ambulance wagon had indeed reached the battle-field, but we found that the two Boers who had been killed in the action had been loaded into it. So we requisitioned one of the captured spring carriages with driver, made a bed in it of straw and canvas, and were going to turn over our drinking water and rations, when we found that we had forgotten all about our last spare horse, a thin, decrepit mare, that carried our six tins of conserves in a gunny sack over her saddle. I found her quietly grazing within two hundred yards, with rations and saddle intact. Everything being now prepared we rode off to join General De Wet, while Lieut. Asselberg was to escort his wounded brother officer to Brandfort, where we hoped to find him convalescent before long. It turned out, however, as we learned later, that Lieut. Nix was incapable of being transported; he was taken to Klip Kraal, attended by the British surgeon, and removed to the three houses, where a hospital had been established. Toward evening the Boers fell back to the right bank of the Modder, leaving some of their wounded and Lieut. Nix in the hospital, which was taken possession of by the advancing British division. Subsequently Lieut. Nix was removed to a British hospital in Bloemfontein, and died there April 11th, after undergoing an operation.*

We found General De Wet busily engaged with his adjutant near the broken wagons; he paid no attention whatever to my congratulations on his success, and we decided to ride over to the waterworks, feed ourselves and our horses and rejoin De Wet later. For our horses we found some oats the British had left, and we made a meal of the food Major Demange had picked up in the British camp. The excitement of the action now wore

* The Dutch attachés were in hard luck. Of the Dutch army, Capt. Ram was taken with typhoid fever soon after arrival at Pretoria, and was desperately ill for three months; subsequently he had the tip of the elbow broken off by shrapnel; Lieut. Thompson was slightly wounded in the face by a lyddite shell near Ladysmith, and subsequently fell into the hands of the British at Poplar Grove, with Col. Gourko. Of the Dutch-Indian army Lieut. Nix was mortally wounded at Sanna's Post, and his brother officer, Lieut. Asselberg, was taken with enteric fever at Durban, while returning to the Transvaal; he remained in a hospital at Durban, and was just able to be about at the time when we took our final leave from the Boer government at Nelspruit, Sept. 11.

off, and after the fatigues and privations of the last three days and nights, nature asserted her right. After finishing our simple meal, which we shared with two equally hungry Boers, we were without food and found that we were very tired, and our horses still more so; our guide, moreover, had been taken away and detailed for ambulance duty. In the ensuing council of war, Capt. Allum voted for returning to our base (our little wagon) at Brandfort; I voted for remaining with De Wet, and Major Demange after some deliberation voted with Capt. Allum. We decided, however, to find General De Wet first, and if possible find out what his plans were. Accordingly we rode back toward Koornspruit and saw our little ridge, which had been beaten in the morning by British shrapnel-fire from the east, now beaten by a cannonade from the west. We were unable to find the general, and as nothing was going on except some artillery fire, we reluctantly turned our backs on the scene of De Wet's brilliant exploit of the morning, retraced our steps to Sanna's Post, crossed the Modder, and followed the cross country road taken by the prisoners and guns. At the Modder River we found the captured wagon train in the act of crossing. Some thirty or forty wagons were still on the left bank, and there was much trouble in getting them up the steep right bank. While crossing the flat on the right bank we had to traverse one of those immense swarms of locusts peculiar to South Africa. It was 600 yards across and how long it was I can't venture to say. About six miles from the crossing we found the British prisoners and guns tucked away between the hills. There was no definite road now which we could follow, but in the far distance we saw our road running up along a hillside toward Os Spruit. We had been told that there was a large British camp at Glen Siding, just north of the railway bridge over the Modder River, that the British had made another lodgment at Karee Siding, perhaps 10 miles north of Glen Siding and ten miles south of Brandfort, and that the British would probably make a strong effort from these two places (probably 12-15 miles west of us) to recapture the prisoners and guns. We soon found ourselves tangled up in wire fences, which we had no means of overcoming except by going to the corners and unwinding the wires. It was getting dusk, and we saw several

patrols in unpleasant neighborhood without being able to see whether they were British or Boer. When we finally were free of the wire fences and reached our road, it was rapidly getting dark. Beyond a creek we crossed we saw a comfortable looking farm and found a Boer ambulance there. Our hopes of a square meal and a bed were quickly dispelled by the surgeon, who informed us that in the afternoon numerous British patrols had been seen in the vicinity, and that the farm was deserted, but that we might reach Jacobsdale a few miles farther north where we could certainly put up for the night. An hour's ride on our weary horses over stony paths brought us to this haven, where we proposed to regale ourselves and our horses by a square meal and a good night's rest. We were most cordially welcomed by the farmer, disposed of immense quantities of bread and butter, coffee and buttermilk and on retiring gave instructions not to wake us before eight A. M. But at 6 A. M. the farmer woke us up with the information that a squadron of lancers were behind the nearest hill, less than half a mile away and wanted to know what we were going to do about it. We had dressed, saddled and sneaked out the back way in a very brief time.* Our kind host would accept no pay, and told us that around the hill we would find a farm whence a road led to the northeast, following which for three miles we would find a road leading to Os Spruit on which we would be safe from British patrols. We found the farm, took a boy along as guide as far as the road to Os Spruit and reached Brandfort at 9 P. M. that evening. Ten miles out of Brandfort we met General Delarey with four guns and about 800 men *en route* to Os Spruit to frustrate any attempted recapture of the British prisoners and guns.

The British had lost at Sanna's Post all their baggage, 7 guns out of 12, 440 prisoners, 100 killed and wounded, about 150 wagons and between one and two thousand draught animals. The Boer losses were two killed and eleven wounded. In Colonel Alderson's baggage were found itineraries from Kimberley and Mafeking to Bloemfontein and Pretoria, made by

* Soon after our departure the squadron entered the farm and consumed everything eatable and three of its men were captured that morning by a Boer patrol.

British engineer officers in 1896 and 1897. Extracts from them were subsequently published in the Transvaal papers.

General De Wet's plan had succeeded admirably ; he planted himself with 400 men across the British line of retreat toward Bloemfontein, while the remainder of the command and the artillery were used merely to stir up the British camp. The wagon train marched without military protection or precaution, and fell helplessly into the hands of the Boers, and the surprise was so complete that of the 7 guns captured but one had been disabled by hammering the threads of the breech screw.

At Brandfort we hoped to see General De Wet before long, and bitter was our disappointment when we learned that he was continuing his raid to the south, capturing, a few days later, a British battalion near De Wet's Dorp and cornering some 1500 British colonial troops at Wepener. To join him now was impossible on account of the condition of our horses, and we had to content ourselves with waiting for events to come our way. It was not until May 3 that several British divisions came out from Karee Siding behind Tafelkop, and deployed in the plain for an advance on Brandfort.

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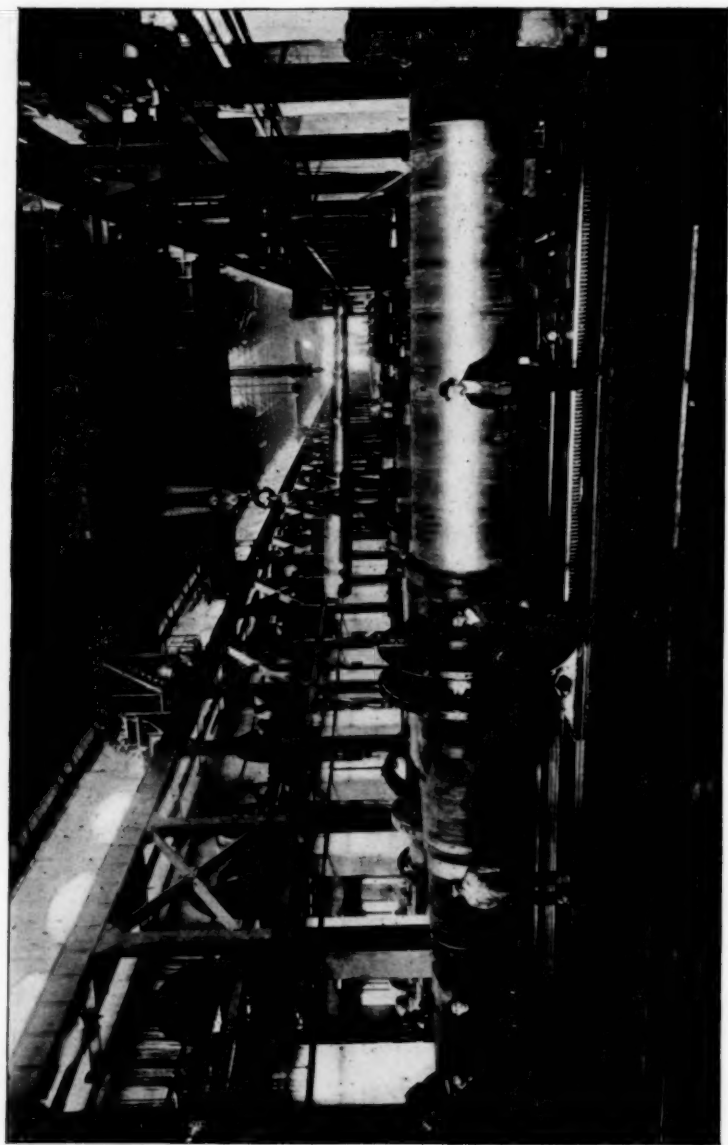
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INTERIOR SEACOAST GUN SHOP—WATERVLIET.
(16-IN. B. L. RIFLE ON LATHE IN FOREGROUND.)

Translations and Reprints.

AN ORDNANCE NOTE.

THE 16-inch B. L. rifle—(see *opposite page*)—which is being completed at the Watervliet Arsenal, N. Y., is the first of the series proposed by the Endicott board for the defense of our principal seaports.

The total length of the gun is 49 feet, 2.9 inches; its largest diameter, 60 inches; and its smallest, at the muzzle, 28 inches.

The powder chamber is 90.7 inches long by 18.9 inches diameter; contents, 26,355 cubic inches. The powder charge is 1176 pounds black powder, or 576 pounds smokeless powder.

The projectile, of steel, weighs 2370 pounds, and is 5 feet 4 inches long. The muzzle energy developed, with a pressure of 37,000 pounds to the square inch, is 88,000 foot tons; with a penetration into steel armor of 42.3 inches.

The calculated extreme range is about 21 miles. The total cost of one round fired from this gun is about \$1000. The completed gun weighs 130 gross tons, from forgings in the rough weighing 375 gross tons. It is the most powerful weapon ever constructed by any government.

The money for the fabrication of the gun was appropriated in June, 1896. In December following, a contract was made with the Bethlehem Steel Company for the forgings; the tube, jacket, and breech-block to be of nickel steel.

The gun is a built up one, and consists of the tube, jacket, and seven hoops.

The first forgings were received at the Arsenal in February, 1898, but they were not placed in the lathe until May, 1898.

Much difficulty was experienced in obtaining suitable annealing furnaces, but finally the oil and high-pressure steam principle was applied with success.

At different times it has been proposed to mount this gun on a minimum port carriage; a disappearing carriage; and *en barbette*. Its mounting and location are not definitely decided.

NOTE: For detailed description of piece and processes of manufacture, see Notes on the Construction of Ordnance, No. 78; Washington, November 27th, 1900.

RUSSIA—MILITARY REVIEW OF THE YEAR 1900.

(From *Russkii Invalid*, No. 1, 1901.)

DURING the past year the Russian military authorities have had a difficult and intricate task to perform, viz., the organization of a great expedition to China to combat an insurrectionary movement which had broken out in that country. Not to speak of the novelty of this undertaking and the extraordinary distance of the territory of operations from the sources of recruitment and supply of the Russian troops, there were a great many other obstacles and difficulties to be overcome. It was necessary to quickly relieve the crisis in the province of Pechili, where the legations were hard pressed by the Chinese, and where the central point of the insurrection lay, and at the same time to protect the East China railroad, leading through Manchuria and in course of construction, from the insurgents, and to secure control of the Amoor River. Besides, the whole Russo-Chinese border, which extends over 1900 versts and for the most part in a desert, thinly populated country, had to be protected. The field of operations in Manchuria, where the railroad extends 2000 versts, was exceptionally large. There was lack of transportation means on the Amoor. Military roads had to be constructed in Transcaucasia and in Northern Manchuria. Several rifle battalions of the Amoor military district had to be formed into 2-battalion regiments simultaneously with the carrying out of the operations. At the same time that the troops were being transported they had to be supplied with ammunition and provisions, and the failures of grain and hay crops in the Trans-Baikal made it difficult to utilize the supplies of provisions and forage in that country.

Nevertheless, all these difficulties were overcome with complete success.

In spite of the fact that over 100,000 reservists were enlisted in the Siberian and Amoor military districts, the mobilization was carried through according to schedule and without delay, and the various troop units were in readiness several days earlier than had been fixed by the mobilization plans.

Less than six weeks after the order for mobilization, the following points were occupied: In Northern Manchuria, on the Magistral railroad, its central point—Charbin; in the western part—Chailar; in the eastern part, the line of the Mudansjan River. Simultaneously with the occupation of the Chun-tschun fortress the southern part of the Ussuri territory was made secure, and, what was the most important, the Chinese troops threatening Blagovieshchensk on the Amoor were beaten.

By the end of September the great tasks imposed on the Russian troops were performed. In less than six months the Russian troops in

Pechili province, with the coöperation of the detachments of the other powers, had possession of Taku, Tientsin, and Peking, the best Chinese troops were beaten, and the legations were relieved. In the extensive territory of operations of Manchuria the Russian troops in 3 months took Aigun, Tsitsikar, Girin, and Mukdun, and occupied 2000 versts of the East China railroad. Within this short time the Chinese troops in Manchuria had ceased to exist as organized units; they were beaten, scattered, and obliged to lay down their arms.

The result of the mobilization and concentration of troops in the Far East, and of the transportation of troops, horses, and stores, was as follows:

On October 14 there were in Pechili province and Manchuria, in the Siberian district and the Semirjetschensk territory, 126 battalions, 118 squadrons and companies, 336 guns, 8 machine guns, and 4 fortress artillery battalions. The total strength of these troops, with the administrative branches and establishments, amounted to 3900 officers and 173,000 enlisted men.

From the beginning of the troubles in the Far East up to the 14th of October there were forwarded over the Siberian railroad and thence over the Baikal Sea to Trans-Baikal, 54,410 men and 11,407 horses.

From European Russia there were brought by sea 10,107 men to Vladivostok and 9709 to Port Arthur.* In all there were forwarded to the Amoor military district and the Kwantung territory by rail and sea 74,226 men. In the same 3 months there arrived in Trans-Baikal over the Siberian railroad about 6,775,560 lbs.; by sea to Vladivostok, 15,804,000 lbs.; to Port Arthur, 45,133,200 lbs.

The quick and decisive results of the Russian troops in the Far East made it possible to proceed to demobilization in the fall. On September 20 the order was given to diminish the strength of the mobilized troops in the Asiatic districts, this to be done in two distinct portions, and immediately thereupon these troops were demobilized and those brought from European Russia to East Asia were returned to their garrisons.

During the past year a number of measures relating to organization were carried out, part of them having connection with the events in the Far East and affecting both the troops and the administrative branches.

In the Chief Staff (great general staff), the Quartermaster General's Department was created in 2 sections, and the office of the military scientific committee placed under it, while the department for the transportation of troops and military stores attached to this staff was transformed into the "Administration of Military Communications." The staff of the Amoor military district was formed after the model of the frontier military districts and the administrative office of a chief of military communications was established at that point.

* According to official sources now at hand there were sent from European Russia the 3d, 4th, and 5th rifle brigades with their artillery, a rapid-fire battery of the guard rifle division, a sapper battalion with its parks, and 2 fortress and 5 field battalions. Besides, reserve and field hospitals, and troops for the protection of the railroads were sent.

Important changes in the organization of the troops took place in the Asiatic districts. The line infantry battalions stationed in the Amoor military district were made into rifle regiments of 2 battalions each, out of which, after the addition of one such regiment formed in European Russia, the 4th, 5th, and 6th East Siberian rifle brigades were formed. The fortress infantry regiment at Vladivostock was reorganized into 2 fortress regiments at 3 battalions each; in Port Arthur a fortress infantry regiment of 4 battalions was formed, and in Nikolajevsk a fortress infantry battalion. Before the beginning of the troubles in the Far East two battalions with war strength were formed out of the fortress artillery stationed at Vladivostock; the Kwantung (Port Arthur) fortress artillery was strengthened; in the Amoor military district a Siberian army corps was formed and afterwards a second one was formed.

In the Turkestan military district all the line battalions were changed into rifle battalions, and the line cadre battalions into reserve battalions, a new rifle battalion being added to the former; all these battalions were distributed among the Turkestan rifle brigades at the rate of 4 battalions each; the Tashkent and trans-Caspian local brigades received the names of 1st and 2d Turkestan reserve brigades. In the same district a Krasnowodsk reserve battalion was formed and in the 1st Turkestan army corps the 1st Turkestan Cossack division was formed. The fortress artillery company stationed in Kushk was developed into a battalion.

In 1900 many measures were carried out which had been adopted in 1899 for the improvement of the officers' service and material welfare. For the hitherto existing mixed system of promotion to vacancies in the higher grades on account of distinguished service and according to seniority was substituted a common system of promotion according to seniority. By means of the new method of promotion the defect of the former system was removed, which consisted in the exceedingly irregular change in grades in the various units, bureaus, and administrative departments of the army, and was felt above all among the officers of the front, the great mass of whom in every independent unit were promoted according to vacancies occurring. During the summer and fall of last year the promotions of field officers were made according to the new regulations.

The increase in pay of officers allowed in 1899 was extended to the furloughed and nonactive officers of the Cossack armies in 1900. The pay table according to grades established in 1899 for the Regular troops was also applied in its entirety to the Cossack armies, so that the pay of the officers of these armies, from 2d lieutenant to captain, inclusive, was increased to more than double. Thanks to this measure, the material condition of the mass of the Cossack officers was radically improved; with the former scanty pay, with periodical transfers from the troops of the first ban to the furloughed class and *vice versa*, and with the obligation to keep in readiness a war horse during furlough, these offi-

cers were kept in straitened circumstances. At the same time a new table of increased table allowances of officers was established, embracing certain positions within the troops units.

In view of the special service conditions on the Kwantung peninsula, the advantages established for the most remote provinces, consisting mainly in increased pay, were extended to the military officials stationed there.

As early as 1897 a special commission was formed in the great general staff for the improvement of the living conditions of the officers, and this commission, besides the change made in the increase of pay, deemed it desirable to reduce the expenditures on uniforms by simplifying the latter. In view of the exceedingly varied opinions expressed with regard to the propositions of the committee, the only change made was to allow general, field, and company officers to wear waterproof cloaks and capes in cities and *residences*, whereas these could only be worn outside of cities in 1894.

The increase of the cadet corps, begun in 1899 with the increase of the one at Warsaw, was continued last year by the formation of a new corps in Sumy, government of Charkof, and by the reorganization into a cadet corps of the preparatory school of the Siberian cadet corps, calling it the Chabarovsk cadet corps. Thus it is made possible for the officers of the most remote frontier to prepare their sons for the war schools without sending them several thousand versts away for this purpose. In Novocherkask there has been established a preparatory boarding school for the preparation of children of officers, officials, and important members of the nobility of the Don Cossack army for entry into the Don cadet corps. An important step in the improvement of the instructors of the cadet corps is the establishment of a pedagogic course at the administrative headquarters of the military educational establishments for the preparation of officers as instructors in the corps.

At the beginning of the school year 1900-1901 the regulations for infantry war schools approved in 1894 were applied, with certain modifications and additions, to the Moscow and Kief war schools.

Last year the order was issued to form a half squadron at the Nicholas academy of the general staff. This order, which will be carried out in the fall of this year, will improve the instruction of the attendants of the academy in riding, a thing which has great significance for their employment in the field as general staff officers. In the summer of last year the corner stone of the new academy building was laid. The new extensive buildings will not only make it possible to arrange better the theoretical and especially the practical exercises of the officers being instructed in the academy, but it will materially improve the existence of the officers.

In the central intendency department an intendency course has been established, for the purpose of training officers and civilians specially for the intendance service.

With regard to the activity of the military department in the way of preparing the troops for war, and especially as regards the publication and revision of the regulations and orders relating thereto, mention must be made, above all, of the issue for final preparation and publication of the regulations on infantry service in the front. As early as the spring of 1897 a provisional draft of these regulations, which had been elaborated by the great general staff as a substitute for the regulations of 1881, was issued to the troops for test. The remarks of the commanders were handed in in the fall of 1899 and then the great general staff instituted a special committee for the preparation and final editing of the regulations of the infantry service in the front. The regulations were approved last year as edited by this commission. In the spring of last year the order was issued that the artillery should take as its guide, and test, the provisional draft of front service regulations of the foot (field) artillery during the next camp period. The 3d part, viz., the division (battalion) drill; the reception of the commander; the march in review; and the 4th part, viz., the fight, were prepared by a special committee, and the changes suggested by the tests made will serve as a basis for the final editing. Of regulations common to all arms there were sent to commanders last year for final editing the "Instructions for troops in battle," and "Instructions for the activity in battle of detachments of all arms" prepared in 1899 as a substitute for the 1882 edition, including the necessary instructions for the conduct of the battle which are contained in the regulations for the various arms, among them also the 4th part of the artillery regulations, viz., the battle. In the spring of last year the "Instructions for the execution of 'mobilization assemblies,'" which were introduced as a result of long experiments with these assemblies, which have been in vogue since 1885, were issued to the troops for their guidance.

An important step toward raising the military preparedness of the cavalry is the approval of the "Provisional regulations on the purchase of remounts for the cavalry," which radically changes the hitherto existing system of cavalry remounts. Among the principal advantages of the new regulations are: The elimination of the commercial principle from the process of obtaining remounts, substituting direct dealings of the war ministry with the horse breeders, from whom the remounts are to be purchased, not, as formerly, by remount agents, but by special committees, who are responsible for the purchases made. Through this new system 90 per cent. of the money spent by the government for remounts will go to the breeders, while heretofore only 54 per cent. went to them. It is obvious that the government will be able to buy better horses and that the breeders will be encouraged to raise better stock.

GERMANY.—GRAND MANŒUVRES OF THE BAVARIAN AND SAXON ARMIES.

(From *Revue Militaire de l'Etranger*, April, 1901.)

THE Army Corps of each of these armies shall execute grand manœuvres according to article 552 of Field Service regulations.

II. Cavalry Manœuvres: 1. Bavaria.—A cavalry division composed of the 1st, 4th and 5th brigades, a mounted group of the 5th field artillery regiment and a detachment of pioneers of the 2d battalion, shall execute special manœuvres in the territory of the II Corps under the direction of the Inspector of Cavalry.

The regiments of the 1st Brigade shall be composed of five squadrons, those of the 4th and 5th of four.

The units taking part in those manœuvres shall not participate in the brigade and division manœuvres of their army corps.

The cavalry division shall take part in the manœuvres of the II Army Corps.

The regiments of the 4th and 5th brigades shall furnish each a squadron to the 4th and 5th Infantry Divisions.

2. Saxony.—A cavalry division composed of the 23d, 24th, and 32d brigades, a mounted group of the 12th field artillery regiment and a pioneer detachment of the XII Corps (1st Saxon) shall be assembled on the territory of the XIX Corps (2d Saxon) for the execution of special manœuvres.

At the end of the manœuvres the various staffs and troop units of the division shall take part in the grand manœuvres of their respective corps, with the exception, however, of the Hussar Regiment No. 19, which shall be detailed to the XIX Corps.

III. Journeys of Instruction.—Cavalry instruction journeys shall take place: in Bavaria in the I Corps; in Saxony, in the XIX Corps (2d Saxon).

DEMAND FOR HORSES IN ENGLAND.—United States Consul-General Guenther, at Frankfort, in a report to the State Department, says: In consequence of the South African war, horses are in great demand in England. Between October, 1899, and the 31st of January, 1901, 35,775 mares and geldings, and 3627 stallions were bought in the United Kingdom for South Africa; other countries furnished 36,314 mares and geldings, and 35,516 stallions for the same purpose. The British horses, especially those from Ireland, are said to have been the most desirable, those from the United States and Canada following.

FRANCE—AUTUMN MANŒUVRES.

(Translated by C. A. R. from *Revue Internationale*, March, 1901.)

THE grand Autumn manœuvres of the present year of the French army will, according to a decree of the War Ministry just published, take place according to the following programme :

Grand army manœuvres will take place under the direction of General Brugère, Vice-President of the Superior Council of War, in two parts of France. In the Eastern part of the Republic four army corps (the 1, 2, 6, and 20th) and 4 cavalry divisions (2, 3, without the 1st Cuirassier Brigade, 4, and 5), will be assembled, while for the western part of the country the 11th and 18th Army Corps, the 34th Infantry Brigade of the 9th Army Corps, besides the 46th Infantry Brigade of the 12th Army Corps, the 1st Cuirassier Brigade of the 3d cavalry division, and the 7th Hussar Regiment are detailed. All the other troops will execute brigade exercises.

Furthermore, two considerable cavalry exercises still, will take place, the one for the 7th cavalry division in union with the 7th and 8th cavalry brigade, the other for the 5th Cuirassier and 6th Dragoon Brigade, both belonging to the 6th cavalry division, and for the 14th Cavalry brigade. Brigade exercises for riding will not take place. Other corps participating in the manœuvres which are not among the cavalry brigades already mentioned, will be assigned to the infantry brigades and to the Corps Exercises.

For fortress exercises the polygon of the Camp of Châlons has been placed at the disposition of the troops.

Independent of these exercises are those which will take place in Gebirgskrieg in the Alps and in Vogesen. The troops stationed at Tunis and Algiers exercise independently.

From the special instructions issued until now for the manœuvres, may be especially noted that the Fourth Battalion of the 9, 10, and 12th Army Corps, stationed in Paris, as well as the 6, 7, and 20th Army Corps removed to the frontier, and the 11th and 18th Corps, shall not participate in the manœuvres. Moreover, attention is called to the order issued by General Gallifet at one time, in which only horses over 7 years old will be taken to the manœuvres. Notice will also be again called to the order that the Cuirassier Regiment shall provide no mounts for foreign officers, and that these regiments shall furnish escorts only to the President of the Republic. In consequence of the many unnatural events occurring in the manœuvres of the past year, it has been decided that a division of field artillery for every two batteries shall be assigned to each army corps, in the Brigade Manœuvres.

The *Gaulois* alludes in its number of January 25, 1901, to this year's manœuvres in the following interesting manner :

"At first glance one is amazed at the extraordinary importance of the operations planned, especially on account of the enormous effective with which the cavalry troops are to be represented, more numerous than are generally, the troops of all arms together assembled for the manœuvres. Two circumstances are to be especially noted in the plans of the manœuvres for 1901. The one is the grouping and placing in marching order, of our four army corps and four cavalry divisions on the eastern and northern frontiers. Almost 150,000 men and 30,000 horses will participate in the operations in the territory between Reims and Soissons. Such a gathering of troops has never before been present at the manœuvres. The other interesting feature or novelty to be offered by General Brugère is the embarking and debarking of an army corps on the coast of the Atlantic. Simultaneous with the grand manœuvres of the eastern army corps, manœuvres will take place in the West between the 18th corps (Bordeaux) and the 11th (Nantes), large cavalry masses participating. The Generalissimo intends to effect the embarkation of one of these army corps, probably with the 18th in Rochefort, to be connected with manœuvres of debarkation in St. Nazaire or at some other point on the coast. This will be the first attempt of the kind and therefore of paramount interest. These manœuvres will naturally be the source of numberless comments; all kinds of suppositions will be advanced as to the manner and extension of the manœuvres, and the plan of the same will surely be associated with General Mercier's projects in the Senate, in regard to contingencies connected with this kind of exercises."

The *Gaulois* will probably be at rest when it learns that General Brugère has again given up the manœuvres of debarkation. The fact is that it became evident that there were not beginning to be ships enough to carry out such comprehensive experiments as were projected, and the undertaking had therefore to be abandoned. Furthermore attention was called to the fact, that in executing such manœuvres, the weak points of the French coast for landing purposes would be brought to the notice of the foreign admirals.

ARMY WAGON AND AUTOMOBILE. — An old United States army wagon of the "prairie schooner" pattern rattling down Broadway a little before noon to-day attracted the attention of every person passing up or down the sidewalks. It was drawn by four mules, caparisoned in the broad strapped, heavy harness of the army service. The "off" mules were saddled and ridden by two Regulars, wearing the uniform of the artillery. The drivers guided the patient mules and the lumbering vehicle, which was covered with white canvas stamped "U. S. A. No. 4," bent over a hoop canopy, in and out through the tangle of trucks and cable cars with easy skill.

Just below Fulton Street the little locomobile, which runs between the Custom House and the appraisers' stores and which is labelled "U. S. Customs," ran alongside the "schooner," and the two proceeded southward side by side, offering a contrast between the transportation methods of the two departments of the government service or of the times, past and present.—*N. Y. Com. Adv.*, May, 1901.

GUERRILLA OR PARTISAN WARFARE.

BY T. MILLER MAGUIRE, M.A., LL.D.

(From the United Service Magazine.)

THE teachings of history are ignored in all our political and military concerns. The classes of society who of necessity must govern our people—whether under our present anachronism of a constitution as expounded by Lord Salisbury, or under any system of government—are dangerously ignorant of most things which it is the bounden duty of rulers to know. I happen to learn on good authority that not one member of Parliament out of three ever read such works as Gibbon's or Alison's immortal treatises, and that not one in ten has made himself acquainted with any leading authority on military history. How many members of the Council of National Defense have read six volumes in any or every language about the Conduct of War? Had they a sound knowledge of the works of Mahan and Goltz; had they ever worked through the curriculum of a German cadet school; had they pondered over the pages of Napier; they would not, and indeed could not, have involved our nation in the miserable incidents of the present war. If our officers had been conversant with the military records of modern Europe to the small extent of knowledge set forth in French school books; had they been taught the story of our campaigns in India, America and New Zealand, they would not have been "befooled by the simple and very ordinary devices of peasants and hunters" (to quote Major Callwell in "Tactics of To-day"), and the author of "With Seven Generals" would have written very different annals.

When a crisis comes, our leaders rush about wildly, searching for some glimmering light; had they been wise in time they never would have been involved in darkness worse than Cimmerian. When will they adopt the maxim, *gouverner c'est prévoir*?

The attitude of our folk in regard to the partisan warfare of De Wet and his friends is only possible because of the ignorance of history that prevails. I have a very small library, a library that our plutocratic members of Parliament would laugh to scorn, and yet it contains enough information about guerillas to supply scores of articles.

It is very clear that the greatest confusion of thought prevails as to guerilla warfare, partisan warfare, warfare by *parti*, raids by detached parts of a regular army, organized risings on the rear of conquering armies, fitful and unorganized outbursts of peasant insurgents; and methodical efforts of the folk of a subjugated country to shake off the yoke of the invader.

Our critics confound the operations of Charrette and Cathelineau with those of the buccaneer Morgan, and the bandit Dhoondiah Waugh, and they group in the same category Trenck and Davidoff, Schill and

the Empecinado, Toussaint L'Ouverture and Riel, Garibaldi and Hofer, the Franc-tireurs and Cossacks, Schamyl and Tantia Topee, Mosby and Wallace, Black Brunswickers and Rapparees.

The position of the same chief may change from being glorious to being one of mere wasteful malignity, in the same theatre of operations in a few years. Suppose after Lee's surrender at Appomattox Court House, his cavalry had gone South, and then into Colorado and Wyoming, and thence raided in the direction of San Francisco or Utah, or Chicago, they would have soon been transformed from patriots into banditti. Hofer's desperate prolonging of the war after the battle of Wagram was as deplorable as his movements after the battle of Aspern were magnificent.

It is very hard to draw a line, of course, but it is very clear that when the regular government of any nation has ceased to exist or has made peace, further military movements, regular or partisan, should cease also. Moreover, when the leader of a band or an individual has come to terms with the enemy, he should never take up arms against the same enemy till a new *casus belli* has arisen or at any rate till so ordered by the recognized chiefs of his community. A state of peace and war cannot subsist at the same time in the same person with regard to the same foe.

Peasants who take up arms against invaders are in great danger unless they act under regular orders, and wear distinguishing marks. No invaders have ever allowed the same man during hostilities to be a peasant to-day and a warrior the next day and a peasant again the next week, except our invaders of the Orange State and the Transvaal. But then our affairs have ceased to be managed by methodical plans either antique or modern.

In some cases, especially in communities with national garbs, for example, in the Caucasus and the Tyrol, and Montenegro and Albania irregular levies wore the national costume, and that was warning enough of their belligerent capacity. The Spanish guerillas could not have and did not desire to have the garb of Regular soldiers; in fact they did not begin their terrible work till their Regular armies were beaten, but then they were, both by dress and other distinctive marks; manifestly militant and not peaceful persons, as Lord Byron says:

"And whomso'er along the path you meet
Bears in his cap the badge of crimson hue,
Which tells you whom to shun and whom to greet:
Woe to the man that walks in public view
Without of loyalty this token true:
Sharp is the knife, and sudden is the stroke;
And sorely would the Gallic foeman rue,
If subtle poniards, wrapt beneath the cloke,
Could blunt the sabre's edge, or clear the cannon's smoke." *

No such phenomenon has ever been tolerated as for the defensive men of war to dress in the garb of the dead invaders and then claim to

* "Childe Harold," l. 50.

be treated as fair belligerents, except in South Africa. For a soldier to spy, or undertake any military duty whatever in civilian dress or in his opponent's uniform is death without ceremony, and must be so, if invasion is not to mean such a clearance of the inhabitants as to annihilate the conquered population. The Confederates were invaded, and they had been robbed by the Federals who had not, as they held, a legal *casus belli*, yet they were most particular in this regard. "Stonewall Jackson's" men were in rags in the Shenandoah Valley; they looted enormous supplies of clothing after the defeat of Banks, of a color very similar to their own, but as it rendered them liable to be mistaken for Federals he caused the arrest of every man who wore it, and thus he reduced his force to its first state of "looped and windowed raggedness," but he played the game of war fairly. The Federals would very properly have shot every Confederate prisoner whom they caught in their uniform. What would be said by our canting philosophers if every Boer caught in our khaki was shot forthwith?

The best guerilla chiefs have always worked by rule. It does not pay them for their organized bands however small and mobile to become disorganized, unrecognizable, undisciplined, causing more terror to their fellow citizens than to the foe. Cossacks were irregulars, as were the Pandours and the Croats, but their leaders were skilled in the art of war and obeyed its rules. They all had very distinctive dresses. There was no deception in the clothing of the awful followers of Attila or Zenghis Khan. Nor will such sorry devices as excite the admiration of some friends of the Boers commend themselves to future strategists. If some child of genius, though the son of a mandarin, swearing eternal vengeance by the ruins of the temples of Peking, leads again the hordes of Asia to the wreck of Western civilization, he will not conquer by means of the paltriest devices of a poltroon; his desperadoes will be adorned with the insignia of their race. *

The confusion of ideas that prevails as to De Wet and his merry men, and as to the precautionary and retaliatory measures of our officers, results from pure ignorance and nothing else. Of course De Wet's proceedings were perfectly regular till the fall of Pretoria, and if Mr. Steyn be with him, they may be legally regular still. In any case his persistence after the fall of all regular government is not a bit more illegal than the proceedings of Schill and Hofer. All three have been guilty of immoral conduct in prolonging the war beyond reason. But Chanzy and Bourbaki also prolonged on a much larger scale the Franco-German War, as it turned out, beyond reason.

Yet if the Germans had been as great "softies" as our Cabinet, the followers of Gambetta would have been justified, and the Boers are quite

*In *Crampton's Magazine* an account is given of "The Ruined Provinces" by an officer of the International Army, who says, "The whole region from Peking to the coast, about one hundred and fifteen miles by wagon-road, has been laid desolate by the Allies. Every house has been looted and numbers of them destroyed."

justified, like Captain Mahan and other authorities, in believing that their adversaries lost grit and were easily tired of war. If this be De Wet's belief his operations are *prima facie* very well designed. He probably has formed his view on the data which caused Captain Mahan in 1897 to warn us that in a time of crisis both Tory and Whig leaders would prove broken reeds by reason of the military ineptitude and the moral timidity of mere rhetoricians. But if De Wet be merely acting in a frenzy of either ill temper or despair, he has ceased to be an object of admiration or respect, and he cannot maintain that he has the fanatical self-denying support of his people. They are not of the type of Schamyl's Circassians, 500,000 of whom expatriated themselves in the sixties rather than submit to Russia. His "slim" compatriots are quite ready to make money out of the British.

I assert that the British have ample authority and many precedents before them as to the treatment of armed peasants, and as to laying waste and otherwise punishing localities which abet raids by irregular levies on lines of military communication. If need were I could show that, if history's ample page can prove anything, it can prove that the treatment of their peasant opponents before the capture of Pretoria and since then by our officers, has erred on the side of leniency, and that there has been no precedent under similar circumstances for the considerate treatment meted out to their dogged and treacherous foes, male and female. No Regular troops have treated irregular levies so well before in any campaign since the fall of the Roman Empire. I will discuss Napoleon's policy with similar opponents again, yet he was by no means a ferocious conqueror, indeed his cool brain was averse to violence and his worst atrocities were committed under the influence of cool political and technical calculations. Yet he had no hesitation in adopting a mode of curing guerilla frenzy, much more thorough than Lord Kitchener's.

Wellington's moderation was well known, he went so far as to protest most strongly against the sack of stormed towns, which in his time was a point of usual military etiquette. After he invaded France he was welcomed by the friends of the old dynasty, and he was only too pleased to protect the peasantry; yet he would not allow irregular raids in his rear, or duplicity among the peasants. I quote his order:—*

"The conduct of the people of Bidarry and Baigorri has given me the greatest pain. If they wish to make war let them join the ranks of the enemy; but I will not permit them to play the part alternately of peaceable inhabitants and soldiers; I give them warning that if they persist in making war, they must join the enemy's ranks and become soldiers; they must not remain in their villages."

In this proclamation there was nothing in the slightest degree unjust; it trenchanted on none of the natural rights of man to defend his country. It merely denounced as pirates and robbers those who neither yielded

* Alison's "Europe," Vol. XI. p. 285.

the submission which is the condition of protection to the citizen, nor assumed the profession which gives the privileges of the soldier.

General Grant was no savage devastator; he was a methodical, cool, hard-hearted, but absolutely fair conqueror. He would not allow any "cant" to stand in the way of victory. Therefore he definitely took the side of Sherman when philanthropists raved against the wasting of Georgia. Nor was he turned aside from his object by the tears of women any more than by the weapons of men. I quote Grant's orders to Sheridan:

"City Point, Va., Aug. 16, 3.30 P. M., 1864.

"MAJOR-GENERAL SHERIDAN, Winchester, Va.:

"If you can possibly spare a division of cavalry, send them through Loudoun County to destroy and carry off the crops, animals, negroes, and all men under fifty years of age capable of bearing arms. In this way you will get many of Mosby's men. All male citizens under fifty can be fitly held as prisoners of war, not as citizen prisoners. If not already soldiers, they will be made so the moment the rebel army gets hold of them.

"U. S. GRANT, Lieutenant-General."

"Headquarters, Armies of the United States,

"City Point, Va., Aug. 26, 2.40 P. M., 1864.

"MAJOR-GENERAL SHERIDAN, Halltown, Va.:

"Give the enemy no rest, and if it is possible to follow the Virginian Central Road, follow that far. Do all the damage to railroads and crops you can. Carry off stock of all descriptions and negroes, so as to prevent further planting. If the war is to last another year we want the Shenandoah Valley to remain a barren waste.

"U. S. GRANT, Lieutenant-General."

There were cases in which the Federal generals (1861-1865) went somewhat too far, for example, Pope's orders when he received the command of the Army of Virginia were wrong, not because they were directly contrary to international law, but because he did not clearly distinguish between raids by irregulars and the operations of Regular cavalry, and in trying to compel the invaded population to take the oath of allegiance on pain of expulsion from their homes he did not act in accordance with the precedent.

Nothing ought to be done to the detriment of civilian inhabitants unless their food-supplies are used by belligerents, or unless they aid and abet raids or act as spies, or fight or resist requisitions.

Women are not outside the laws of war; they are deceptive, vindictive, ferocious, and unscrupulous to a degree, and as a rule their conduct is the very worst feature in guerilla wars. Their interference must end in savagery whether they act as Amazons in South America or in Dahomey, or as commissariat agents and spies or assassins in South Africa or the Tyrol, as *petroleuses* in Paris, as mutilators in the East, or like the charming Spanish maidens, caressing their lovers for flaying or burning soldiers alive.

Nothing can be more to the point than the orders of the German Crown Prince immediately after the invasion of France, August, 1870.

I quote them at length, and I am surprised that our authorities did not circulate similar orders at the beginning of the war; I should have thought that the Committee of National Defence would have been familiar with that favorite text of the War Office, "The Franco-German War," even if it knew no other campaign:

"I.—Military jurisdiction is established by this decree. It will be extended to all the territory occupied by German troops, to every action tending to endanger the security of those troops, to causing them injury, or lending assistance to the enemy. Military jurisdiction will be considered as in force, and proclaimed through all the extent of a canton as soon as it is posted in any locality forming part of it.

"II.—All persons not forming part of the French army, and not proving their quality as soldiers by outward signs, and who

"(a) Shall serve the enemies as spies;

"(b) Shall mislead the German troops when charged to act for as guides;

"(c) Shall kill, wound, or rob persons belonging to the German troops, or making part of their suite;

"(d) Shall destroy bridges or canals, damage telegraphic lines or railways, render roads impassable, set fire to munitions and provisions of war, or troops' quarters;

"(e) Shall take up arms against the German troops; will be punished by death. In each case, the officer in command will institute a council of war, with authority to try the matter and pronounce sentence. These councils can only condemn to death. Their sentences will be executed immediately.

"III.—The communes to which the culprits belong, as well as those whose territory may have been the scene of the offence, will be condemned in a penalty for each case equalling the amount of their taxes.

"IV.—The inhabitants will have to supply all necessaries for the support of the troops. Each soldier will receive daily 750 grammes of bread, 500 grammes of meat, 250 grammes of lard, 30 grammes of coffee, 60 grammes of tobacco or 5 cigars, $\frac{1}{2}$ litre of wine, or 1 litre of beer, or 1-10 of brandy. The rations to be furnished daily for each horse will be 6 kilogrammes of oats, 2 kilogrammes of hay, and 1 $\frac{1}{2}$ kilogramme of straw. In case of the inhabitants preferring an indemnity in coin to one in kind, it will be fixed at 2 francs each soldier daily.

"V.—All commanders of detached corps will have the right to order a requisition of provisions needful to the support of their troops. The requisition of other articles judged indispensable to the army, can only be ordered by generals and officers acting as such. In all cases, nothing will be demanded of the inhabitants except what is necessary for the support of the troops, and official receipts will be given for everything supplied. We hope, therefore, that the inhabitants will not offer any obstacles to the requisitions which may be deemed necessary.

"VI.—With regard to individual bargains between the troops and the inhabitants, we fix as an equivalent for 1 franc, 8 silbergros or 28 kreutzers.

"The General Commanding-in-Chief the Third German Army,

"FREDERIC WILLIAM,

"Prince Royal of Prussia."

As a rule the efforts of the most brilliant partisans have been disastrous to their people. Unless in conjunction with Regular troops of their own nation, or unless their nation is allied with some powerful foreign

state, as Spain was with England in the Peninsular War, failure is certain. Most guerilla operations are productive of nothing but injury to all concerned. Alison's judgment is correct :

"The Tyrolese War was destined to add another to the numerous proofs which history affords, that no amount of patriotism, however great, and no prodigies of valor, however marvelous, not even when aided by the enthusiasm of religion and the strength of mountains, can successfully maintain a protracted resistance against a numerous and well prepared enemy, if destitute of the organization and support of a regular government."*

Yet "courage never to submit or yield," and what is more, not to be overcome, dignifies even a bad cause, and in a good cause confers an immortality of fame. Strange to say in the annals of war, the resolute chieftains of the smaller or partisan warfare have won more fame than any except the very first rank of commanders. The Empecinado will be remembered when Giron is forgotten. Hofer is better known than Lefebvre, and Schamyl than any Muscovite leader of his time. The most celebrated Cubans are Gomez and Maceo.

In future articles I propose to deal with partisan warfare in different countries more in detail.

*Alison's "Europe," Vol. VIII, p. 212.

RUSSIAN COLONIZATION.—A letter from a Moscow correspondent to the London *Standard* says that the Russians are steadily establishing their grip upon Manchuria by the familiar methods which they always employ in new territory. A complete service of engineers, drivers, etc., has been provided to work the trains of the Manchurian Railway, for which locomotives have been supplied from America, and coaches collected from all the state railways of the empire. These, of course, will be available for soldiers, if need should arise, and the troops are in readiness. The railway through Siberia this spring will carry a hundred thousand immigrants into the far East. Sixteen thousand were settled along the Ussuri River last year, and the new contingents are expected to go south of the Amur into what is still, on paper, Chinese territory. These immigrants are of the class subsidized by the Government. They are conveyed at nominal prices, with all their goods and chattels, provided with land and a certain amount of hard cash. In return for this they are expected to serve as soldiers when wanted. Most of the males have been through the military mill already. This is known as the Cossack system, and the men are to all intents and purposes actually Cossacks. "It is by these means," says the correspondent, "that Russia has invariably kept her hold on any territory once seized, and Manchuria will be no exception to the rule. It is the privileges of service and the license accorded to these men that make them Cossacks, and they never fail to live up to what we understand by that name, as has quite recently been proved at Blagovestchensk and elsewhere in the Amur region."

MILITARY TRAINING IN SECONDARY SCHOOLS.

BY THE REV. C. G. GULL, M.A., CAPTAIN-COMMANDANT 4TH LONDON
VOLUNTEER RIFLE CORPS, HEAD MASTER OF THE
GROCERS' COMPANY'S SCHOOL.

(From the Journal of the Royal United Service Institution.)

MAY I say at the outset that I do not come here merely as a school-master, aroused like most of my brethren by the national needs revealed in the late campaign in Africa, with the offer of suggestions based only on theory and enthusiasm, but rather as one who for many years has tried an experiment in a practical way on a fairly wide basis, an experiment, the results of which, I venture to think, justify me in believing that its extension and ultimate general adoption would do much to place the defensive forces of the country on a satisfactory footing. Twenty-four years ago I commenced my school military work by establishing a cadet corps at Dulwich College; for the last nineteen years I have commanded a six-company school battalion; and at the present time I am also in command of the 4th London, a new Volunteer corps, wholly composed of past members, or old boys, of the Grocers' Company's School.

Practically, all thinking Englishmen agree that it is necessary to adopt some system by which the forces of the Empire may, as occasion requires, be rapidly and effectively increased. This common object it is proposed to attain in many different ways: conscription, rifle clubs, bicycle defenders, cadet corps, are a few of the many suggestions offered by enthusiastic but, perhaps, insufficiently experienced reformers. * *

It has always seemed to me remarkable that the army is the only department of athletics in which early training is neglected. If you wish to make a boy a cricketer, you take him in hand before he goes to his public school; if he is to be a good rider you give him a mount in early youth; swimming is regularly taught to children; but drill, which is essentially a matter of rigid obedience, of collective practice and of mechanical precision, is generally deferred to an age when the practice necessary for the attainment for these habits either disgusts or tends to cramp the intelligence and destroy the faculty of individual initiative. In the navy they have adopted a wiser method. They catch their recruits when young, and train them during boyhood to the required pitch of discipline.

Boys do not, in my experience, find drill training irksome; partly because they pick up the routine work far more quickly than men, partly because they more enjoy the precision and the rhythmic movements of drill, and also because their imagination is caught by the military ideal. And may I venture here to disagree with one sentence

in Dr. Warre's scheme as adopted by the Head Masters' Conference—"that it is not advisable to deal with boys under the age of fifteen. To begin military drill with boys before that age can do but little good to them, and will only make them, in too many cases, dislike the idea of military service of any kind." My experience leads me to an exactly opposite conclusion. Our boys take their places in the battalion at the age of eleven. There are, I believe, officers present, who have been kind enough to undertake the annual inspection of our school battalion: I prefer to leave it to them to say whether it is possible to give effective training at that age, and will only myself bear witness to the fact that to be promoted from the squad to the company as soon as possible, is the great ambition of the youngest boys, and that the school battalion is exceedingly popular both with the boys and with their parents. In London day schools the majority of boys going in for business leave at fifteen years of age, and therefore would escape training altogether on Dr. Warre's proposition. Of course with boys so young service weapons are impossible, but a light dummy rifle made of wood serves the purpose of training and is sufficient for all but the firing exercise. The smart handling of dummy weapons in boyhood makes proficiency easy in early manhood.

It is unnecessary, perhaps, to labor the point that military drill and the use of arms can be, and ought to be, taught to boys. Many schemes are on foot to promote this object. Cadet corps are being formed in many public schools. Lord Meath is attempting to organize drill among boys of the elementary school class, and the prejudice against soldiering has to a considerable extent disappeared. But my fear is that all these movements, which are flourishing now during the national khaki fit, will ultimately retard rather than assist the main object, viz., the universal training of English boys in drill, manœuvre, and the use of arms, because they are all based on the voluntary principle. If statistics of cadet corps during the twenty years before the outbreak of the war in South Africa were available, it would, I think, be found that cadet corps existed in comparatively few schools, that the numbers in established corps fluctuated considerably from year to year, and that the total strength represented but a fraction of the boys in the schools. The reason for this unsatisfactory state of things is obvious. Cadet corps in the past have not been part of the ordinary school training, and it is difficult to see how they can be made so in the future, because they necessarily involve expenditure for uniforms, in addition to the cost of ammunition and other incidental expenses. Consequently the military training cannot be made compulsory, and, therefore, cannot be given in school hours; and the average boy will not, under ordinary conditions, give up his free time to drill and manœuvre any more than the average man will think it necessary that he should join a Volunteer corps. The excellent work done in school cadet corps in spite of these adverse conditions, reflects the greatest possible credit on those who have

organized and carried them on ; but even those who have been most successful will probably admit that success has been attained only at the cost of incessant labor, of unwearied tact, and of considerable self-sacrifice. The necessity of providing inducements which may allure recruits in the shape of marches-out, camps, shooting matches, corps suppers and entertainments, has increased the expenditure to a point which has made the financial burden considerable ; and the climax of the troubles of commanding officers has perhaps been that, until within the last few years, the military authorities have rewarded their efforts with hardly concealed disdain, and have carefully abstained from giving them the smallest assistance beyond the free issue of a limited number of service weapons. All honor to the masters in Public Schools who, under such conditions, have stuck to their work and triumphed over all the natural and artificial stumbling-blocks in their path. Dr. Warre and the Head Masters' Conference, taking advantage of the awakened patriotism of the country, have given a great impetus to the movement. The number of cadet corps approved by the War Office has increased by 64 per cent. in the present year, and there are now 79 such corps, omitting cadet battalions. But the average number enrolled does not exceed 100 per corps, so that the whole number under training amounts roughly to 8000 boys. It is obvious from these figures that we are still a long way below the standard proposed by the Committee of the Head Masters' Conference in their resolution passed *nem. con.* on the 15th February of the present year in the following terms : " As a step in the organization of national defence, it is desirable that all persons *in statu pupillari* at the Universities and Public Secondary Schools, above 15 years of age, and capable of bearing arms, should be enrolled for the purpose of instruction in drill, manœuvre, and the use of arms." I do not myself believe that that standard will ever be reached through the agency of cadet corps alone. Schools differ so much in their circumstances that it is hardly conceivable that cadet corps can be universally established, or, if established, can include in their ranks anything like a majority of the boys in attendance. But the fact remains that the standard proposed must in some way be attained. The nation demands it ; many school authorities are eager to realize it ; the present enthusiasm has sufficient force, if utilized at once, to make the idea an accomplished fact. There is no great difficulty in the way. At the present time drill is one of the subjects of instruction laid down in the schemes of the Charity Commission, which control the majority of Public Secondary Schools in England. It is, therefore, the duty of all such schools to train boys in drill. Unfortunately there is no authority which undertakes to supervise the methods of instruction ; the result has been that in many schools drill is either entirely neglected or taught to a portion of the school only ; in some it is used as a punishment ; in few is there any real organization of company and battalion ; the Queen's Regulations are but too often altered to the will of an ignorant and

indifferent instructor. In fact, school drill is often a synonym for fancy drill, with no smartness and no interest. But the fact remains that it is at the present time the duty of Public Schools to teach drill. Head masters wish to carry out that duty, and are seeking information and guidance. Dr. Warre has told us that the Head Masters' Conference, representing 102 of the principal Public Schools, has taken action, and that 83 head masters have affirmed the principle of the resolution of the Committee. Let me supplement Dr. Warre's statement with a short account of the action taken by the Incorporated Association of Head Masters in the same direction. This Association embraces 450 Public Secondary Schools. At a general meeting held in June this year at St. John's College, Cambridge, a Committee was, on a resolution proposed by myself, "instructed to communicate with the War Office with a view to encourage schools to take their part in a system of National Defence." The War Office has consented to receive a deputation on the subject, and a memorandum has been drawn up for presentation by the deputation. The Committee make the following suggestions :—

1. That the War Office should issue Regulations for a course of Physical and Military Drill in Schools.
2. That all schools which adopt the War Office Regulations should be inspected annually.
3. That efficient instructors should be provided by the War Office at reasonable charges.
4. That the War Office should offer to masters in Secondary Schools the same facilities in schools of instruction as are given to officers of Rifle Volunteers.
5. That the Government should furnish suitable arms for all boys over fifteen years of age, both for drill and for instruction in rifle shooting in Morris tube ranges. Where practicable, facilities should be granted for the use of service ranges.
6. That the Government should provide ammunition for such boys on the same terms as to Volunteer Rifle Corps.
7. That the officers commanding military districts should be responsible for the military training and inspection of all schools in their districts which adopt the War Office Regulations.
8. That an Inspector-General of Military Training in Schools should be appointed.

The Committee believe that under such a system in times of national crisis, the home army of defence could be rapidly and effectively increased.

The broad principles underlying these suggestions are: first, that every school should exercise its discretion as to accepting the War Office regulations and inspection; but that all boys in the schools, which do accept, should go through a regular training in military drill and in shooting as part of the ordinary work of the school. No Act of Parliament would be required. A simple transfer of authority from one Gov-

ernment Department to another is not a very serious change; but to hand over the inspectional powers with respect to drill from the Charity Commission to the War Office would result in a great increase of efficiency, if the necessary organization were provided and well maintained. * * * *

The suggestion of the Committee of the Head Masters' Association as to the issue of *regulations* by the War Office for a course of physical and military drill in schools might, with advantage, be met by the issue of a single red book, containing all that was necessary to be learned and practiced both in drill and in musketry for the school course. It would be necessary to start with a clear idea of the definite amount of work to be required; this would probably be limited to the chief sections of squad, company, and battalion drill—that is, roughly, the first hundred pages of the present Infantry Drill—together with the manual and firing exercise and a simple course of musketry instruction. Thorough practice in physical drill, and especially in free gymnastics, is already given in many schools which have not hitherto aimed at military drill; it is invaluable, and should form a prominent part of the school training.

In order that the scheme proposed may be carried out with success, it is essential that great care should be taken in the selection of sergeant-instructors. Most adjutants of Volunteer corps have had experience of the difficulty of securing the right men for these positions; it will be even more difficult to select instructors for schools, because they will be necessarily under less supervision, and, therefore, in a position of greater freedom and responsibility; and at the same time they will have to meet difficulties which do not confront them in an ordinary volunteer battalion; the vivacity of some boys, their love of mischief, their aggravating power to torment, will call forth all the tact and the firmness of their instructors, and will test their ability to arouse the enthusiasm for smartness, which is so essential to good work on the parade ground. At the same time, for army pensioners who possess the necessary qualifications and character, the position of Public School drill instructors will be an excellent employment. The pay should be fairly high in order to attract the best men, the school contribution supplementing the pension.

But if military work in schools is to be successful, it must not be left entirely under the control of the sergeant-instructor class. Every inducement should be held out to assistant masters to take an active and efficient part in the training. There will, I think, be little difficulty here; in all large schools one or more of the members of the staff have been members of a volunteer or of a cadet corps; to secure the coöperation of such men they should be recognized in the army list as subordinate officers, and should have every facility given them in the schools for officers to make themselves thoroughly efficient. There would appear to be no reason why such men should not be allowed to

attend schools on precisely the same conditions as the ordinary officer of Volunteers, without cost to themselves ; it might be possible, to meet the conditions of a schoolmaster's life, to arrange a military school for the month of August in a camp situated, perhaps, in an attractive position on the coast, so that schoolmasters might combine their military training with their summer holidays.

A sufficient number of these trained officers should be appointed to ensure general supervision of the work of the instructors, and to take the place of the commanding officer and field officers in battalion drill ; in my experience it is far better to appoint the company officers and the non-commissioned officers from the boys ; the work is thus made more interesting and more instructive, while the hope for promotion acts as an incentive to smartness on parade ; a few skeleton drills will make boy-officers quite at home in their work.

The organization within the schools, which I have ventured to sketch out, would be gathered up and controlled by the district organization, the officer commanding each military district being responsible for the military instruction in all schools which adopt the scheme. He would select the sergeant-instructors, inspect the results of their work, and generally inspire and control the officers appointed. He would also be responsible for arranging the instructor's visits in smaller schools, which would not require the full service of an instructor, and he would make arrangements in conjunction with headmasters of schools for combining a group of small schools for battalion purposes. To complete the organization, an inspector-general of military training in schools would be necessary, so that a uniform standard of work may be maintained and a grip may be kept by the War Office on the whole system. * * *

I venture to suggest to you that the scheme proposed, if it should be adopted by the War Office, will be both effectual and cheap. The expenditure of the Government would be practically limited to the cost of rifles and ammunition, with possibly a slightly increased staff in the district offices. That it would be effectual I cannot doubt. The ordinary recruit is supposed to become a trained soldier after a three years' course. There is no comparison between the aptitude of a boy for drill and manœuvre and that of the ordinary recruit ; moreover, the knowledge and habit acquired in early days become part of the character and cannot be forgotten. Lord Roberts has declared that the training given to boys will make them as efficient for service in after life as is the average reserve man when he rejoins the colors.

Certainly the ease and steadiness with which well-trained boys take their places in the ranks in after years would surprise those who have not witnessed it. The recruit stage does not exist for such men. If such training became general, the nation would receive a great accession of strength. The present is a splendid opportunity ; the schools are, I believe, ready to fall into line ; a little hearty encouragement and organization on the part of the War Office are all that is needed.

DISCUSSION.

Major A. C. YATE (The Duke of Connaught's Own Regiment of Bombay Infantry, 2d Baluch Battalion):—I cannot speak as an expert in this matter, for two reasons: because it is well-nigh 30 years since I left school, and there were no cadet corps then, at any rate in my own Public School; and because I have since then been mostly in India, and, consequently, not much in contact with Public Schools. At the same time, the idea of military training in schools has long been familiar to me. It came into my mind first, ten years or more ago, when I was visiting Roslin Chapel, near Edinburgh. As I went through the town, I came across the village shoemaker drilling a squad of the village National School lads. It struck me then that what that man could do—he was a retired soldier—might be done (and very possibly was then being done unbeknown to me) in many English, Scotch and Irish villages. Indeed, at a later period, in another village close to Edinburgh called Colinton, I found a young Sandhurst Cadet drilling the village boys. I should have liked to have ventilated that idea at the time in *Blackwood's Magazine*, and I remember speaking to Mr. William Blackwood on the subject. However, he did not think then that it was of sufficient importance, although I rather incline to think that to-day he would. It has become a matter of national importance. When Dr. Warre gave his lecture here six months ago, I made a point of being present, as I made a point of being here to-day. I think it will be generally admitted that the first duty of a citizen is not to himself so much as to the State, and it is on those grounds that I contend, and agree with those who contend, that military training in our Secondary Schools should be compulsory; despite the fact that the feeling of boys, parents, and masters are alike in favor of it at this moment. I do not believe there was a Single Public School, at the speech-day of which, last July or August, the head master did not state with pride the number of boys of that school who had served or were serving in South Africa. The same feeling animated humbler schools. One which the Duke of York inspected was proud in having sent 400 or 500 lads to South Africa. I took up the *Saturday Review* the other day, and I saw that 2597 boys brought up in the Reformatory Schools of England had served out there, that one of them had got a commission, and I further gathered that one or two of them had won the V. C. or the Distinguished Service Medal. Add as another instance the Newport Market Refuge and Army Training School, which has already put some 700 boys—originally destitute lads—into the army, 200 of whom have been or are serving in South Africa. These facts are pretty strong arguments, I think, in favor of what schools—both schools of the primary and secondary class—may do to train our soldiers. It is impossible in this connection not to think of the Duke of York's and the Royal Hibernian Schools as training grounds for the humbler ranks of our army. When the question of uniform comes in, it occurs to me that the boys at the Duke of York's School, as far as I remember, drilled, at their annual inspection, in flannels, and not in uniform. I think the question of uniform is not a highly important one, and should be left open. Another point that seems to invite attention is, why our officers and soldiers fail to show at the commencement of a campaign that familiarity with the conditions of the war on which they are entering which they should do. The cause seems to me to lie in this, that the national life is against our youth getting the requisite training. I mean a training similar to that which the Boer gets on the veldt, the backwoodsman "out west," and the colonial in the colonies. There is no doubt that the lives these men lead teach them an infinity of things which our young men of all

classes cannot learn, brought up as they are in towns, and under essentially domesticated conditions, which do not develop the acute powers of observation and do not familiarize them with danger. This, I think, is a point with which we must deal in our military training in schools, and I would, therefore, suggest that that training should be not mere drill, but largely out-of-door work, for the purpose of cultivating the powers of observation and of inference from what is observed. Baden-Powell's "Hints on Scouting" is the best *vade-mecum* I know. It certainly taught me a great deal of what a man may do by exercising his powers of observation and inference from what he observes. I say that the development of that power is an important factor in the military training of our youth. I am very glad to notice that, in continuation of the work which is now being done by the Public Schools, the Universities (Cambridge, certainly, if not Oxford) also are taking up military training most earnestly. I look to the Universities to furnish that supply of instructors among our Public School masters, who will undoubtedly be required to carry on military training in Secondary Schools. We look to our Public Schools to educate and train for us a strong reserve of officers. It is well known that in this South African War the casualties among the officers have been three times as many as those among the men, in proportion to the numbers engaged. That gives us at once an idea of the very large reserve of officers that we require ready for the service of the country. It must be relatively much more numerous than the reserve of soldiers. Our Public Schools can help us to solve this difficulty. One word about military history, which is surely a subject that our Public Schools might teach. When I was at school I learned a little Greek and Roman History, and possibly in that Greek and Roman history there may have been a smattering of Greek and Roman military history, but I can honestly say that there was nothing of *British* military history. That is what the English boy wants to learn. It is a knowledge useful nowadays to men in all professions, when men of all professions take a deep interest, if not an active part, in the army. To our statesmen the knowledge is essential. Above all it is sorely needed by our journalists—the men who accompany our armies into the field and mislead the nation with their erroneous criticisms and ignorant exaggerations. * * * *

The CHAIRMAN (Major-General Viscount Frankfort de Montmorency, K. C. B.):—We have listened to Mr. Gull's paper on Military Training in Secondary Schools with great interest, and I venture to take this opportunity of thanking him on your behalf for such a practical paper. He speaks not only as a schoolmaster who understands the feeling of boys, but also as a commanding officer of a corps where he knows what can be done with boys through school training. Well, that is a great subject; it may well be considered a national subject. It should not only commend itself to all parents and guardians for the physical benefits their sons would get, but it should be considered essential for all to be ready to uphold the honor of England should any nation or combination threaten our Empire. There is no doubt that boys pick up instruction quicker than adults, and find it less irksome. If it could only be understood that it was the bounden duty for all to be ready to take part in the defense of the Empire when called upon, drill of some kind would be considered an essential part of a boy's education, and would at once be made obligatory in all schools. Special cadet corps and battalions have been started in many schools with the most satisfactory results. The boys like the drill. There is no difficulty in getting good instructors from the Regular army, or, what is better still, from the

teachers themselves ; but to encourage this movement and keep it in a satisfactory position, something must be done to make military drill an obligatory portion of ordinary school training. There is no doubt that some schools could get on without Government assistance, but that is not the question. This movement should be universal. We must not forget the poorer schools and the difficulty they would have to contend against. They would be perfectly unable to start camps and shooting matches, which are all encouragements for the boys to get on, and they would be handicapped ; in fact, they would be out of it altogether with the richer schools. If the Government will give a grant, or if the Government will agree with the memorandum which was drawn up by the meeting at St. John's College, or if they will give a grant and a certain portion of ammunition, rifles, and lend ranges, there would be no difficulty, or very little difficulty, in making this movement a splendid success ; at any rate it should not be allowed to depend upon voluntary contributions. I must say that up to this the Government have taken very little interest in this movement ; I might also say they have damped it, they have thrown cold water on it. Out of certain requests made by Lord Meath, the Chairman of the Lads' Drill Association, the War Office have only acceded to two, firstly, the granting of substantive commissions to officers in cadet battalions ; and, secondly, they have sanctioned a simpler uniform, which does not cost them anything, for the cadet corps. I do not touch on the subject of organization or on the subject of corps being affiliated, or attached to Volunteer battalions, or upon the subject of regulations for guidance of cadet battalions, because I think those matters are better left to the schools in the first instance. The greater the freedom the greater will be the interest. If the movement develops and becomes permanent a uniform code of regulations will be necessary ; but to make it a success it will be necessary to make military drill one of the obligatory subjects in all schools. The Government must take an interest in the movement, and grant assistance, for without it, it would be unwise for poorer schools to start corps depending on voluntary subscriptions, which might fall off at any moment, and masters should not be expected to go round with the hat for money to support an imperial question. We must look at this movement as our duty to our country ; we must look at it as a national duty that we are all ready for the ranks on a sudden call, and the drill learnt at school would enable us to take our places in the ranks with a short preparation. From these remarks you will see that I have treated this movement as in its infancy. It has made a good start, thanks to those masters who can look ahead. But I look upon it as a part of the Imperial Defence question. This cadet movement has been already started, I am glad to say, in some of the Colonies with Government aid ; but it is absolutely necessary, in order to make it permanent and universal in this country, that it should be recognized as an Imperial question by Her Majesty's Government.

CAVALRY NOTES—SOUTH AFRICA, 1899-1900.*

BY CAPTAIN J. VAUGHAN, 7TH HUSSARS.

(From the *Journal of the Royal United Service Institution*.)

1. *Nature of Country*.—South Africa is a large-scale country. Miles separate river from river, ridge from ridge; and in all parts are found splendid defensive positions commanding the surrounding veldt. In such a country infantry are lost. However admirable their courage and perfect their training, they must be outmanœuvred, on these limitless manœuvring grounds, by a mounted enemy such as the Boers. Hence, it was apparent to all who had previously served in South Africa that large bodies of mounted troops would be required. It is true that in Natal and the Eastern Transvaal the mountainous country is difficult for horsemen; yet, even there, the distances between the various defensive positions are such as to almost preclude the successful manœuvring of infantry. Moreover, the mounted Boers can change front so rapidly that they can always convert the flank attack of the slow-moving infantry into a frontal attack. We must, therefore, conclude that every column operating in South Africa should be composed chiefly of mounted troops, and we must admit that the greater portion of both the Orange River Colony and the Transvaal is very favorable for cavalry to work over. The chief obstacles to free movement are scarcity of water, grass, and forage, necessitating large convoys, and the difficult drifts through the rivers. On the other hand, both fighting troops and baggage can often move for miles on a broad front.

2. *Character of Enemy*.—The Boers are a formidable enemy. They have in their ranks, probably, the same proportion of brave men and ordinary men as other nations of European extraction, and what they lose by want of discipline they gain by cunning. Brought up from the cradle to think that deception is the highest of arts, and to despise the Englishman for his openness, they adapt their theories to war with conspicuous success. For, in war, deception is a very valuable asset. On the other hand, they mutually mistrust one another, and herein lies their weakness. They have had the further advantages of knowing the country in which they are operating, wearing no uniform, which enables them to assume the double rôle of soldier or civilian according to the fortune of war in their neighborhood, and a most perfect intelligence furnished by their womenfolk. They thoroughly understand outflank-

* Captain J. Vaughan, 7th Hussars, the writer of these notes, which he had drawn up, without any intention to publish them, was good enough soon after joining the Staff College to allow me to read them; and I have obtained his assent to their appearing in this *Journal*. In my opinion the value to be attached to notes on the war depends a great deal on the opportunities the writer had for forming his judgment. Notes emanating from "goodness knows whom" are of comparatively little value. Captain Vaughan served on the staff in French's Cavalry Division, and at my request he has allowed his name to appear with the notes.—LONSDALE HALE.

ing tactics and are adepts at fighting rear-guard actions; but, for this reason, they are most sensitive of their own flanks and rear. With the exception of the foreigners and Zaps, they have a fixed determination not to fight to a finish; their favorite motto would appear to be:

"He who fights and rides away
Will live to fight another day."

They have no hesitation about retiring immediately things look bad for them. They will fight obstinately at times without apparent reason, and fly from the strongest position equally without reason. It is easier to guess a Kaffir's thoughts from his face than a Boer's thoughts from his actions.

As a shot the Boer is good from 800 up to 2500 or 3000 yards, if he has plenty of time, but often shoots badly at close ranges.

To put the Boer's value as a fighting man briefly: he is a good skirmisher, but a bad fighter.

3. *Condition of our Cavalry.—Regulars.*—At the commencement of the war the British cavalry were well mounted, trained, and organized, but badly armed and equipped.* The squadron and troop leaders were, from India, were seasoned and well trained. For some reason, however, the cavalry were landed late, and had to be used immediately on arrival, with a consequent waste of horseflesh and decreased efficiency.

Colonials.—The Colonial mounted troops consisted of:

- a. Those raised in South Africa.
- b. Oversea Colonials.

Regiments of the former varied considerably, the first raised corps, chiefly composed of Rand and Natal men with a sprinkling of old soldiers and police troopers, were excellent. Later raised corps had a certain proportion of townsmen, ship's stewards, cattle hands, etc., who required some time to learn to shoot and ride. The efficiency of these corps varied considerably with the various officers commanding them. This remark also applies to the Yeomanry.

The oversea Colonials were generally excellent. The men rode better than those of the South African corps, and most of them had had some previous military training. Their weak point was their officers, though in some corps the officers were excellent. This is accounted for by the fact that, in the Colonies, commissions are, to a great extent, obtained through political influence. Nearly all the Colonials are bad horsemasters—especially Australians. On the other hand, they are good campaigners, they are handy at foraging for themselves and their horses, and at cooking, butchering, and making themselves comfortable.

Mounted Infantry.—The Regular mounted infantry required at least mostly, as good as could be wished. The men, especially in regiments

* The cavalry carbine is a most inferior weapon. No two carbines will make the same shooting, even at close ranges; they are also clumsy and too short in the stock. The sword is most unwieldy, and is carried in a scabbard which absolutely prevents its being kept sharp.

two months' training before they should have taken the field. They were converted from foot soldiers into horse soldiers wholesale, and had to perform difficult duties, such as scouting, patrolling, and escorting convoys, almost without previous training. With unbroken horses, new equipment, new men, and the Boers and the wide world opposed to it, the mounted infantry at the beginning of the campaign must have had a trying time.

RECONNAISSANCE.

4. *Scouting*.—In spite of numerous criticisms—mostly passed by civilians at home, guided by the reports of young war correspondents, whose only stock-in-trade was ignorance and assurance—the scouting was usually good, if not brilliant. The country was often very difficult. The Boers hide themselves most cunningly, and often allow the advanced scouts to pass them before opening fire. I cannot remember a single instance, excepting Sannah's Post—where neither squadron officers nor men of the cavalry can be blamed—when the presence of the enemy has not been discovered and reported in good time. In the brigades of the division with which I served, the information furnished by the reconnoitring squadrons was always most reliable. As a rule, officers made their reports clearly and quickly, and with a good tactical appreciation.

Methods.—Although the results were generally satisfactory, I should like to point out certain methods which are not to be commended.

At the beginning of the war the usual practice was, as in peace training, to send out special patrols—under officers or non-commissioned officers—in advance of and in addition to the ordinary advanced flanking and rear-guard squadrons. Gradually, however, this practice was discontinued except in very special cases. Latterly, the almost universal plan has been for the advanced squadron to extend the files of one or two troops at about 100 yards interval, with the remainder of the squadron in support, from half a mile to a mile in rear. I think this practice sprung up because:

1. Officers became scarce.
2. Overweighted and underfed horses were liable to be overtaken and cut off by the enemy.
3. A want of confidence from the above reasons.
4. A belief that the Boers shoot badly when opposed by a widely extended line, and that the men so extended are less likely to be hit than if working in groups.

With regard to 2, it must be remembered that during the greater part of the campaign most horses could not gallop 500 yards, and some could not trot that distance, and that consequently the Boer pony could generally gallop rings round the poor dying troop horse.

The disadvantages of this system are:

1. The line of scouts is very conspicuous; no concealment can be attempted, or use made of the ground.
2. Waste of horseflesh.

3. The troop leader has nothing "under his thumb."
4. The men will often come back at the first few shots, and the whole line may be held up by a few snipers.
5. Men grow careless, and trust to their neighbors instead of using their own eyes.

If this system be permitted at all, men should work in pairs at double the interval; and if one portion of the line of scouts come under fire, the remainder should push on rapidly so as to determine the extent and find the flanks of the enemy's position without delay. The system of working with patrols, in addition, of course to the protective detachments for the security of the main body, appears to avoid all the above disadvantages. These patrols should be sent to converge on suspicious spots, which they should approach, as far as possible, without showing themselves. Information thus obtained will be earlier and more accurate than that obtained by the screens of scouts. The detachments protecting the main body should also work with patrols according to the local requirements of the ground; but these patrols should not be so numerous as to form a screen. There are certain places which must be occupied by the enemy if he is in the neighborhood. In South Africa there are kopjes, ridges, dongas, or other cover; when these are made good, the rest of the ground can be neglected, and much horseflesh saved. Under the present system the screen of scouts rides along as if it expected to find Boers in every tussock of grass on the open veldt, and meanders on at the same pace over high ground, when a halt ought to be made and a thorough, careful search made of the ground in front before proceeding.

Every troop should have at least one interpreter with it, as information can often be obtained from natives. This information should always be verified and distinctly separated from what has been seen. The South African Irregulars had a great advantage in knowing the language, but their reports were often less reliable than those of the Regulars. Many colonials seem to think that if sent out scouting they must come back with a "yarn," and so destroy otherwise good work.

7. *Outposts.*—Outposts were not often disturbed at the commencement of the war when the Boers were generally awaiting an attack. On January 4th, 1900, however, near Colesberg, a squadron of the Inniskillings was attacked by a strong force of Boers soon after daybreak, and but for the prompt action of some of the 10th Hussars and a section of Horse Artillery, would have suffered very severely. The outposts of the 8th and 14th Hussars were also attacked near Machadodorp on October 14th, 1900, and suffered heavily. The Boers crept up in the dark within 30 yards of our picket before they were discovered. In both these cases the near approach of the enemy was attributable to insufficient patrolling. Patrolling at night is jumpy and difficult work; but it is most necessary, especially before daybreak. I think the following points require attention:

1. Necessity of patrolling.
2. Pickets to have some cover, either natural or entrenchments, sangars or barricades.
3. More care should be taken not to reveal the exact whereabouts of the picket to the enemy.

Owing to the wide undulations of the country and the long range of the enemy's weapons pickets generally went out mounted; they did not fall back if attacked, but held their ground till supported. This support should not as a rule be sent to the threatened point, but to some other point which will command or outflank the attackers.

Our most glaring fault in outposts is want of concealment. A Boer scout watching a British force going into camp ought to be able to locate each picket from a distance of three or four miles. The infantry further assisted the enemy by marching a sentry with a fixed bayonet backwards and forwards in front of their sangar.

What is required is a sentry who keeps *his eyes at attention* and *his body hid*, not one who stands at attention and sees nothing.

8. *Fighting*.—The main characteristic of the war has been continual skirmishing and an absence of big battles. Herein the Boers show their appreciation of their own qualities and of ours. The cavalry fighting has been almost entirely on foot, because of:—

1. The debility of the horses.
2. The dislike of the Boers to the open and to fighting to a finish.
3. The natural defensive positions of the country, consisting chiefly of kopjes inaccessible to horsemen.
4. The hesitation of leaders to accept the heavy risks of shock tactics, without the possibility of obtaining a decisive result.

There were four instances in which the cavalry meant charging home: 1. Elandslaagte. 2. Leaving Modder River on the road to Kimberley. 3. Sand River. 4. Diamond Hill. In all these cases the enemy went "as one man," and our losses in the advance were trifling. When our cavalry left Modder River, near Klip Drift, we found the Boers holding a very strong position to bar our advance on Kimberley. Their left flank rested on the river, their right extending westwards towards Magersfontein, the foreground rose gently from the river to the enemy's position. Under cover of the R.H.A., the Lancer Brigade (9th and 16th), galloping up this glacié, charged the centre of the enemy's position. Although our right flank was exposed to a heavy enfilade fire, our losses were small, while the enemy was completely scattered and virtually offered no further opposition during that day. It is interesting to consider how many lives and how many hours would have been required to have successfully captured this position on foot. At Sand River the Boers were in an open valley about 1200 yards distance when the 8th Hussars tried to charge them. Although the horses could only raise a feeble gallop, about 300 Boers fled from the terrifying spectacle of 200 men flogging their horses with the flat of their blunt

swords. Several Boers were killed, chiefly by officers who were well mounted, and several captured; and, but for the inferiority of our swords and horses, many more must have shared their fate.

9. *Skirmishing.*—The Boers are very much better skirmishers than our men; they are quick on and off their horses and take cover rapidly; moreover, they have a much better weapon. The Mauser rifle not only outranges the carbine, but it is easier to shoot with and the clip loading is far superior to our clumsy magazines. It was consequently often found necessary to have a section of guns or pom-poms pretty close to the scouts. Pom-poms have a good moral effect on Boers, and are very quick at getting the range; they were most useful in these continual skirmishes with advanced or rear guards.

10. *Occupying Positions.—Boer Method.*—But it is not only in skirmishing that our cavalry can learn from the Boers. They occupy ground most skilfully. Twenty Boers will occupy a kopje of half a mile or a mile frontage, and it is impossible to tell whether there are 20 or 200 till you get round their flanks, or shell them out of it. Their horses are generally left in groups and minded by the after-riders.

British Method.—Compare our clumsy method. A squadron is ordered to occupy a kopje, the men halt, form up, advance, extend, and finally occupy the position—generally in a straight line. At the commencement of the war, the squadron leaders did not seem to realize that the real object is to *cover every bit of the foreground by the fire of some carbine*. The M.I. were even slower than the cavalry, and many officers seemed to want every man in their command within reach of his voice and eye. The colonials were accustomed to working looser. I remember a squadron of New Zealanders galloping to support a cavalry patrol engaged on a kopje with a superior number of Boers. The leader pointed out the kopje, the men slung out by sections at a smart gallop, the men of each section dashed up to the base of the kopje, flew off their horses, and in a few seconds climbed the kopje like a swarm of ants, and each man from the cover of a rock started firing at the enemy's position. The Nos. 3 collected their four horses, and stowed them away in the folds of the ground or among the rocks.

The officer commanding the New Zealanders told me that his men always worked in the same sections as far as possible. This method of occupying a position—which must of course be first reconnoitred—has the advantages of quickness, cover for men and horses, and simplicity. Sections would require a little training to make them spot the place to make for, but no words of command are required.

11. *Advanced Guards.*—If you are held up during your advance, the universal rules to follow are “extend and outflank.” With Boers the axiom that “10 men on the flank are worth 100 in front” is especially true. If you are fortunate enough to see a Boer in the open always fire at him, however far, as if he hears your bullet whistle he will go.

Rear Guards.—The Boers are adepts at rear guards—possibly owing

to much practice. In this case, if you wish to get through the rear guard, you must depart from the above principle, incur risks, and go right in in the centre; otherwise, the enemy gain requisite time to remove wagons or guns. The Boers have lately been worrying our rear guards, but, as they are not fond of taking risks, have never achieved anything beyond sniping one or two scouts and getting themselves well shelled.

During the march from Bloemfontein to Pretoria the cavalry was fighting Boer rear or flank guards nearly every day. Critics in England were anxious to know why we failed to capture the Boer guns. The reason is simple. There was no infantry fight; the enemy were never beaten, but merely retired from position to position to avoid being rounded up by the cavalry columns operating on their flanks. They often trekked at night, and generally gave their wagons and most of their guns 24 hours' start. Their usual rear guard was composed of 2 guns, 2 pom-poms, and 1000 to 2000 of their best mounted men and the Zaps. Our cavalry advanced guards were composed of tired men on emaciated horses. Both the Boer guns and rifles outranged ours, and when we got them in a tight place they galloped away *ventre à terre* to the next cover.

Bloemfontein-Kroonstad March.—The march from Bloemfontein to Kroonstad was performed on newly detraind remounts carrying always two days' ration and forage—a total of 21 stone. The distance is about 150 miles by the flank routes followed by the cavalry. One brigade left Bloemfontein on Sunday, the other on Monday. Both were astride the Valsch River, 10 miles west of Kroonstad, on Friday afternoon, and the rail was cut north of Kroonstad that night. A large proportion of these two weak brigades were on outpost every night, and, in addition to fighting every day, the men had to forage, butcher, etc., for themselves, as the baggage was unable to keep up. The record of this march then stands:—30 miles a day; the enemy turned out of two strong positions and in further full retreat without the infantry being seriously engaged; the cavalry fought every day and were entirely *en l'air*. Could any troops have done more?

12. *Marching.*—It is universally agreed that the present weights must be reduced. Squadron wagons, carts, or pack horses must be provided to march immediately in rear of the fighting column. The squadron wagons or carts should be horsed, their teams interchangeable with horses in the ranks with incipient sore backs, etc. In South Africa the number of hours during which the horses have been saddled up have generally contributed more to wearing out horses than the distance traversed. The cavalry often being in touch with the enemy throughout the day were frequently unable to off-saddle, but opportunities of off-saddling were sometimes neglected. There were more cases of sore backs than there ought to have been, but they were attributable to bad saddlery (American especially), heavy weights, long hours, and emaciated horses—not to want of care on the part of regimental officers and men.

13. *Horse Management.*—Horse management varied in different corps. Some did better than others, but it was impossible for any mortal to keep horses fit under the circumstances. The forage was always insufficient. Full rations were generally 10 lbs. of oats. No hay or bran except very occasionally when on the railway. During the Kimberley-Bloemfontein period 20 lbs. were issued for three days; 10 lbs. to be carried in nosebag, 10 lbs. in cornsack. With rotten nosebags, waste on march and in distribution, it was a lucky horse that got more than 5 lbs. a day. Whilst halted round Paardeberg the ration fell to 2 lbs. a day, and never exceeded 8 lbs. I do not think that the horses actually consumed on an average more than 5 lbs. a day from 10th February to 13th March. There was very little grazing to be obtained, and the water was often insufficient. At the end of April only about 10 per cent. of the horses which left Modder River remained in the ranks. That was the worst period of the campaign for the horses. Further north more forage was obtainable in the country, and the ration issued was larger (10 lbs.).

14. *Conclusions.—Lessons to be Learned by Regimental Officers.*—The conclusion arrived at is, that though severely handicapped, the cavalry have done their utmost, than which no man can do more. Putting aside the larger questions of arms, equipment, transport, remounts, etc., which rest with the higher authorities, we may, with profit, consider what can be done by regimental officers to improve the cavalry for war, not only in South Africa, but in any possible or probable theatre.

The points which appear capable of improvement fall under four headings:—

a. *Reconnaissance.*—Train the mind as well as the muscle. All ranks must be taught to think. The greatest fault in our training is that in peace subordinates never think for themselves, and consequently are unable to do so in war. Every problem in reconnaissance, whether of a patrol or a division, must be dealt with separately on its merits. It is not to be expected that all N.C.O.'s and men in a squadron will make equally good scouts. They should all be trained as at present, and those who are keen and likely to turn out well should receive a further training. They should be taught carefully stalking others, hiding themselves, tracking, observing the lie of the country, the run of the rivers, etc., and to report what they see. They should also frequently be given problems, requiring them to extricate themselves from difficult situations, to make them think. This is not an original proposal and is difficult to carry out in England, where squadrons are mere nurseries for furnishing drafts to regiments abroad, and suitable ground is sometimes lacking; but squadron officers might do more than is done to make their men think. What is required is to develop the men's common sense and give them an eye for ground.

b. *Dismounted Work.*—Cavalry must be better trained on foot. All operations should be carried out with an idea against a supposed or

marked enemy. Men should be made to be quicker getting on and off their horses. Positions should be occupied on the lines previously indicated in No. 10. Firing line should be taught to take cover and occupy the ground according to its size and contour. More attention might be given to Morris tube practice and judging distance, but shooting cannot be improved till we have more ammunition, more ranges, and a better weapon.

c. Horse Management.—Our present system provides more for the care of horses for the show-yard than the field. Squadron officers might instruct their subalterns and the latter their troops in the care of horses *in the field* as well as in barracks, remembering that in the field no complicated line, gear, grooming kit, etc., can be carried, and that everything must be simple.

d. Campaigning.—All men should also be taught roughly butchering, cooking, tree-felling, leather-stitching, etc.

THE ZEBRA AS A TRANSPORT ANIMAL.—In a report to the British Foreign Office, Mr. R. J. Sturdy, a veterinary authority, urges the advisability of utilizing the zebra for transport, etc., in Africa. There are enormous numbers of these beautiful animals, which are naturally exempt from the attacks of the tsetse fly, rinderpest, and other local diseases which destroy European horses and cattle. He believes that the difficulties in the way of their domestication are not insuperable. He suggests the construction of special kraals, into which droves of the zebra could be enticed or driven. Once captured, he would leave the animals pretty much to their own devices. "The animals being in this way confined within the kraal, they would naturally," he says, "propagate their species. It is with the offspring that I would propose that the experiment in the way of domesticity would begin. As is well known, it has been found nearly impossible to rear a zebra foal apart from its mother. I would not propose to separate them; they would live along with and be nurtured by their mothers. A few months after birth the young animals could be caught, and by various ways become accustomed to the sight and presence of man. I am very hopeful that in this way a number of young animals of both sexes would become domesticated and prove useful for transport service, and also in propagating their species. The second generation, if my experiment prove in any way successful, would be even more domesticated than their parents, and I am sure that in course of time a large supply of the domesticated zebra would be forthcoming for the future use of transport work at home and abroad.

THE LESSONS OF THE SOUTH AFRICAN AND CHINESE WARS.

BY FRITZ HOENIG.

(* Translated from "*Die Woche*," No. 1, 1901.)

THE art of war cannot be codified; the conduct of a war is dependent on country and people, climate, nature of ground, etc., and above all on the aim of the war. Every war can change its character.

On the Boer side it is a national war, Government and people at one. On the English side an annexation war, the destroying of a nation; and if words were facts, since the annexation England has only to deal with rebels. Over-sea wars may lead to other wars; the home defenses must reckon therewith. If England were now attacked by a powerful sea and land power (or by a coalition), her condition would soon be worse than that of the two Boer Republics.

So long as England has a great naval superiority the mother country is best protected by her fleet. This superiority diminishes yearly with the French and German plans of 1900 and Russian exertions. Moreover, England is no longer able to man her fleet properly.

Under these circumstances the time is approaching when the fleet will not suffice to protect the mother country, and England must then have recourse to a great army reform. As such a reform will need many years before it is in proper working order she must start soon, for every year her military position is growing worse. What General Mercier said the other day is by no means a wild dream. With an adequate sea force and proper preparations the landing of masses in Great Britain is quite possible.

There are no special lessons to be drawn from the Chinese business. It is different with South Africa.

The Boers at the last hour took the political offensive, delivered an ultimatum and pressed into Natal. This systematically prepared offensive appears the ideal of a strategic surprise, by which the weaker power can secure great advantages at the commencement. Such sudden attacks are as old as strategy; their success depends on an exact knowledge of the enemy's condition, on good plans and clever execution, but according to scientific theory, presume a standing army, for it alone can be ready for operations immediately after the declaration of war. The alliance of the Republics rendered possible the carrying out of the plan, their frontiers would be effectively covered by the seizure of the tongue-shaped part of N. W. Natal, and at the same time all the passes be secured.

* From *Journal R. U. S. Inst.*

The march of the different columns of the allies through the passes and their concentrating about Ladysmith upset the idea that from want of preparation and incapacity a levy *en masse* could not seize the strategic offensive immediately after the declaration of war (and that against Regular troops), and the way it was conducted, accompanied by bloody fights, was almost without friction. General White was shut up in Ladysmith. Here is another phenomenon which finds its explanation in the peculiarities of the Boers. They found Natal the most suitable theatre of war for their method of fighting. They now were on English ground; they had beaten the enemy and shut him up; they had safe communications; the Tugela was strategically and tactically a strong line. They might hope by these successes to induce the Dutch in Natal and particularly in Cape Colony to espouse their cause.

As they pressed into Cape Colony to stir it up and cut the English rails, there arose two more theatres of war besides Natal, namely, south of the Orange River and south of Kimberley, each requiring its commander. All the commanders had to act on one common plan. As in Natal, the Boers attained their first objects in these theatres. Their chief advantage was in Natal, as by the investment of Ladysmith they hoped to force the English to send their main force to Natal. General Buller foolishly carried out the wishes of the Boers and also split up his army corps, so that on no one of the three fields of operations could he appear with the necessary superiority. The levy of the Boers lacked, however, a reliable organization, military discipline, and lastly, a settled Commander-in-chief over the forces of both Republics; above all, they lacked the necessary knowledge, the appliances and war material for siege operations, and it was just from these wants that the Boers let themselves in. Patriotism, endurance, shooting powers, and mobility of the individual could not make up for them.

Recognizing their limited strategic capabilities and want of war material, the Boers stopped the strategic offensive at the Tugela. That was right, but they were wrong in not employing the tactical offensive. Ladysmith was not a fortress; the junction of railways and roads only acquired its great strategical importance from its nearness to the Tugela, and because General White, having surrounded himself with fortifications, held his ground there. In view of this situation and the great superiority of the enemy in power, means, money, and politics, the Boers should have pulled themselves together and stormed Ladysmith as quickly as possible. The attempt on Caesar's Camp proves that a well-planned attack would have succeeded. The Boers, however, showed themselves incapable of the requisite discipline and organization; their personal peculiarities stood in the way of the rigid unity of action which was required. As the forces remained unorganized, so the conduct of the war could not be organized.

The lesson we have here is of decisive importance for the whole course of the war. The Boers could not, owing to their political and in-

dividual peculiarities, submit to discipline and organization ; this is the chief cause of their misfortunes.

An enemy cannot be crushed by purely passive fire action ; it is necessary to move ! The weaker force cannot lay down a great strategical scheme on account of his lesser powers, but the tactical offensive when he has beaten off an attack is a necessity, for his great chance is that from the sum of the individual complete successes the war may eventually turn in his favor. With the results achieved by the Boers on the Tugela and the Modder before us, and the perfecting of firearms, this is the most important and certain lesson of modern times, a lesson which can be applied to any theatre of war in Europe—a ray of hope for the weaker States. The army of a weak State must possess in conjunction with the marksmanship and mobility of the Boers, the desire and ability to assume the offensive, and must therefore be carefully trained in the tactical offensive in time of peace.

The so-called offensive-defensive or counter-offensive has always been the pet idea of the tactician ; now there is the long list of cases in this war when it was not only possible and desirable, but would have been accompanied by decisive results. That it was not carried out is not due solely to want of organization, intelligence, and judgment, but also to the psychology of the Boers. As John de Witt said of the Dutch, it is only when the danger stares them in the face that they rise to it.

What has been said as to Ladysmith applies more or less to Kimberley and Mafeking. The idea of the operations in Cape Colony was to rouse the Cape Dutch against the English. There is no question of science in this part of the business, although some of the tactical points previously touched on recur here. After the relief of Kimberley, strategy as far as the Boers were concerned was over. The war was carried on without plan, the guerilla warfare developed and gradually assumed its present form.

England has, however, been forced to exert herself greatly against the bare 50,000 Boers. The war has cost her till now more than £20,000,000, and her field army has been repeatedly brought to a standstill from sickness, casualties, and want of horses. At the end of May there were about 42,000 in the hospitals (counting casualties), nearly a fifth of their entire strength. The standing army and militia reserves were exhausted practically in January ; before February England raised 13 new battalions, a cavalry regiment, 6 horse, 13 field, and 3 howitzer batteries, besides 7893 Volunteers, 24,000 Militia, and 10,663 Yeomanry. Until the end of April 277 steamers were chartered, which conveyed 201,474 men, 34,384 horses, 110 machine guns, 316 field-guns, 42 howitzers, 16 siege, and 6 mountain guns to Africa. At the outbreak of the war there were 8000 Regulars in South Africa, to whom must be added 22,000 South African Volunteers. The number of natives employed in auxiliary services is not known.

Before the end of April 60,000 horses, 17,000 mules were sent, and

15,000 horses and 6000 mules ordered, which have since been sent. Up to the same time rations for 220,000 men and 90,000 beasts were sent. Only such a rich country and so technically and commercially developed, at the same time having command of the sea, could attempt such performances; it beats anything in military history. These performances show what resistance a trained European conscript army would be capable of and what power it would require to defeat it. The Boer War had an example in the War of the French Republic, 1870-71; it will in future be more or less inseparable from it.

England has now an army of 28,000 * men in South Africa, but it is for the most part played out, deficient of officers, and unfit for further employment.

That a peasant people possessed only of mounted infantry has forced England to this great putting forth of her strength is something novel, and these Boers have from the commencement fought in larger or smaller bands. That leads one to tactical and technical grounds. Nowhere have the disappointments been greater, nowhere the apprehensions better grounded than here.

First as to the technical: cyclists and balloons have been of no use worth mentioning, armored trains were no use, signalling alone proved of value at Ladysmith and Maseru. But, on the other hand, the providing of material ready for bridge building, for restoring bridges and railways, and for telegraphs by the manufacturing country, gave a great superiority to its army. And it is chiefly to this fact and the excellence of her railway troops that England has to be thankful that she has been spared catastrophes. Against that, the defeats on the Tugela are partly to be put down to want of reliable maps. The administration had neglected this important business.

England gained nothing by her numerous guns. Excepting at Paardeberg, the artillery have effected next to nothing. It could not hit; the lyddite shells—similar from their ineffectiveness to our abolished *Spreng-granate*—even when they landed where intended, rarely caused serious wounds. The Boers, however, knew how to deceive the English artillery and infantry as to their position as a rule. Both arms wasted on false targets any amount of ammunition, which had little or no effect. The English do not seem to understand how to use their glasses. Smokeless powder was not used, as a rule, by the Boers, and the clear air of South Africa makes observation much easier.

Both the defective musketry training and the ancient method of infantry attack conduced to the English defeats.

Till Lord Roberts appeared on the scene there were only frontal attacks, besides which the English infantry stuck to volley-firing. This latter necessitates remaining a long time in close formation. Naturally the English suffered—as they might have anticipated—the heaviest losses between 1200 and 600 yards, against the Mauser rifle, which was

* Probably 228,000 is intended.—TRANSLATOR.

superior to their own; the attacks were stopped as a rule at 900 to 1000 paces, frequently without the infantry having commenced firing. Later on the casualties of the English were fewer, because Lord Roberts knew how to make use of turning movements, artillery fire, and fighting in skirmishing order; still they always remained heavy. Eventually the losses were diminished from the wearing of khaki uniform, but its advantage was only recognized after many defeats. Of the use of the spade in the fight for entrenching little is said; it was only after defeat that the English threw up earthworks. Their night attacks failed utterly.

On the side of the Boers, wire obstacles in the effective fire zone proved most efficacious, but even they made no use of the spade. Their cover as a rule consisted of heaped-up stones; the so-called S-shaped trenches have proved to be a myth; generally, however, they occupied, very cleverly, positions which lay one behind another.

Thus, again, from this war we draw the lesson as to the decisive effect of the rifle fire of skirmishers, but that must not lead us to underestimate the value of good artillery fire. Taken as a whole, the armament of neither side is up to the level of the day.

The apprehensions as to the terrible mutilations to be caused by small-bore rifles have proved to be unfounded; the Mauser rifle wound, as a rule, healed easily and quickly, although the English medical arrangements are among the weakest points of their organization and quite inadequate.

The supposition that the English attacks were repulsed on account of their heavy losses is wrong. At Colenso the highest loss in two companies was only 21 per cent., while the average was only 5½ per cent. These defeats are therefore not to be attributed to physical but to moral causes, and this evidence of the want of morale of the troops repeats itself:

	Per cent.
At Dundee the average loss was	4
Elaandslaagte	9
Stormberg	3.6
The Modder	6
Magersfontein	9
Spion Kop	7
Belmont	4
Graspan	2.5
Compare that with the losses of the 77th Austrian Regiment at Skalitz	46
Several Prussian regiments at Mars-la-Tour lost be- tween	37 & 45
Some French units at Wörth	90
Several Russian, in 1877, between	50 & 75
The average German loss, for example, was :—	
At Mars-la-Tour	22.4

St. Privat	10
Wörth	11
The French at Wörth	15.7
The " Sedan	18.9
The Russians at Plevna	28

The reconnaissance duties on both sides were very poorly carried out, particularly on the English side.

A peculiarity of the Boer War is the absence of big decisive actions in the field (with the exception of Paardeberg). The Boer tactics save men, the Boer policy was to avoid any chance of a big unfavorable decisive fight; and the English never succeeded, notwithstanding their frequent skilful turnings of the Boers flanks, with considerable mounted forces, in preventing the Boers getting away in good time. The Boers showed a cunning at this game which has never been attained by any army. It is due primarily to their cleverness in moving mounted and fighting dismounted. By avoiding all decisive actions, which might be unfavorable, they have succeeded in dragging on the war in an astonishing way.

The geographico-strategical frontiers, the railway, the capabilities of their horses should have led the Boers to have taken up the inner lines when Lord Roberts turned towards Bloemfontein, and also later. They missed here the chance of systematic working together. Only latterly is any systematic procedure apparent.

The Boer War teaches how great can be the resistance of a determined national levy against a crushing superiority, and how important in war are the moral forces. The generation of huge numbers may lay it to heart.

INSTRUMENT FOR STITCHING WOUNDS.—A most useful instrument has been invented by Dr. Paul Michel, a well known French physician. With it wounds on a body can be stitched effectively, quickly and without causing any pain to the patient. Heretofore wounds were stitched by hand, and this operation was not only somewhat dangerous and slow but also decidedly painful. The new instrument consists of a forceps or pincers and of a case or sheath, which contains a number of nickel hooks or bands somewhat similar to those which are frequently seen on the corners of cardboard boxes. A slight pressure suffices to free these hooks from the sheath, and within one minute between twenty and thirty of them can be placed on a wound in such a manner that they will effectively close it. The reason why they cause no pain is because their tiny rounded points only penetrate the epidermis and not the lower layer of skin. Other advantages which they possess are that they can be easily disinfected, that it is no trouble to remove them from the skin after the wound is healed, and that they leave hardly any trace of a scar. Dr. Michel has received congratulations from the most distinguished European physicians, and his instrument is being rapidly introduced into leading hospitals.

ARTILLERY ESCORT.

(From the Proceedings R. A. Institution.)

I.

THE TACTICS OF THE ARTILLERY ESCORT.

BY LIEUT.-COLONEL D. G. PRINSEP, R. F. A.

THE desirability of the artillery escort being a part of the Batteries themselves has already been pointed out by Captain Charlton, R. F. A., and Captain Robinson, R. G. A., in the R. A. I. "Proceedings," and also by an article in the *United Service Magazine*, by Lt.-Col. Phillpotts, R. H. A., and these officers express a general desire so conclusively that further words on that point are unnecessary.

Lt.-Colonel Phillpotts advocates 1 officer, 20 men, and a "Pom-pom" detachment per battery, but I prefer Captain Charlton's number of 24 N. C. officers and men and would add a .303 Maxim—pole draught so that battery horses could be used with it—and complete detachments. This in the case of a Brigade Division would give (if three batteries were brigaded):

3 Maxims and detachments.

54 effective carbines or rifles.

18 horse holders.

6 draught horses.

75 riding horses, *i. e.*, adding 3 for the N. C. O.'s in charge of Maxims.

Although the moral effect of the "pom-pom" is immense, still I incline to the belief that the .303 Maxim would prove the deadlier weapon and the same ammunition serves for Maxim and small-arm.

The fact that infantry cannot keep up with artillery and that cavalry and mounted infantry are too valuable in their proper spheres to be spared for escort duty with guns cannot be too strongly pointed out, and, as the majority of the other arms know little of the tactics of artillery and have quite enough to do to learn their own rôle perfectly, the protection of artillery would be far better done by the regiment itself who, for its own reputation, would take very good care that it was efficiently performed. Every man of this artillery escort must be a good rider and quick to think and act. A careful teaching of reconnaissance duty, scouting and patrolling, becomes necessary, and here is a strong argument for teaching all ranks in R. F. A. to ride, as a larger selection will be then open to the Battery Commanding Officer when forming his escort. Men might be transferred to the gun detachments from the escort, and *vice versa*, according to their capabilities and, in any case, the escort might materially help the battery in action under certain possibilities, such as heavy casualties at a critical moment when a sustained artillery fire is imperative.

I will say nothing about the great blessing of having only one (mounted) kit in a battery instead of two, as at present, nor of the gunners being able to take the places of drivers on an emergency.

As regards arms, I consider the cavalry .303 carbine in bucket most suitable, but I would give every man in a battery a carbine or revolver and withdraw the utterly useless artillery sword bayonet, which, together with the officers' and N. C. officers' swords, might as well be relegated to limbo as far as their utility is concerned, and the revolver would be a far more effective weapon if of the same pattern as the present officers' pattern (Webley), with 6-inch barrel instead of the short weapon at present issued.

The range-takers might well be included in the escort, as they are useless with the battery and the information would probably come in from them quite as soon as regards ranges without the probable position of the battery being "given away" as not seldom occurs at present.

The tactical handling of an artillery escort requires some care, and in the case of a brigade division could best be done by one of the captains, while with a detached battery a subaltern should take charge of them, as the duty is important and requires skill and watchfulness.

In the first artillery position, which is usually at long range, there will not be much fear of any surprise or attempt to rush the guns, owing to the proximity of the main body of troops and the fact that the cavalry screen is well in advance.

The escort here can be usefully employed in scouting ahead and reporting any movements of the enemy and possible roads for an advance to the 2d position; also any ranges likely to be useful should be taken and noted down, and it should be borne in mind that accurate ranges from the neighborhood of the 1st position to the 2d position may also be useful, as the subtraction of this amount from the gun ranges in the 1st position may give a fair initial range to start with later on.

Extensive patrolling to the flanks will also keep the Artillery Commander *au courant* with the cavalry and infantry movements and give him a general idea as to the probable 2d artillery position.

When in action the escort should not be drawn in too close to the batteries, but be well extended on the exposed flank, from 200 to 600 yards away, under the most advantageous cover they can find. They must remember that they have the limbers, wagons and teams to protect, as well as the gun line, and it is very likely that these teams and not the guns themselves might under certain circumstances be the objective so as to hinder, and even for a time totally prevent any further advance of the batteries, and it must not be forgotten that the teams and limbers, etc., form an easy prey to a cavalry raid from the flanks and rear, and were the horses cut up or stampeded the want of the guns in a more forward position might be a serious embarrassment to the commander of the force.

Sentries or videttes should be pushed well forward on both flanks for

observation purposes and any movements of the enemy likely to affect the batteries at once reported. The commander of the escort should invariably be in constant communication with the commander of the artillery and, if called away should always leave an orderly with the latter in case of any sudden movement of the guns or attack being contemplated. This latter has, I think, not always been done so regularly as might be, but the importance of being in closest possible touch with the commander of the artillery is so obvious as not to require further comment.

The Artillery Commander must explain to the escort commander his plans and probable movements, in order that the escort may be ready to at once carry out their part in conformation, and this will be very patent and more easily understood if the escort is composed of artillerymen. The proper place for the escort, when the guns are moving, would appear to be about $\frac{1}{4}$ to $\frac{1}{2}$ mile on the exposed flank and perhaps a little in advance, and certainly there should be scouts far out, in front and on the exposed flank, to give timely notice of any hostile force likely to interfere with the completion of the manœuvre. The escort should not be expected to do the work of ground scouts.

The order of march of the escort must be left with its commander, but it should always be in a fighting formation, and, as regards the front and outer flank, all precautions must be taken against surprise. The batteries will be a rallying point if driven in. If they are well away to the flank any hostile movement will probably be sufficiently delayed to give the guns time to come into action.

In narrow roads, lanes, defiles, etc., where no parallel communications exist it would appear preferable to put the escort ahead of the guns, with scouts out on the flanks, as the escort can easily get out of the way of the batteries when they emerge and form line for action.

The Maxim guns should be on the most commanding piece of ground and might on occasions be in extension of the gun line, on the exposed flank, but it will be necessary to ensure a field of fire to protect the wagon line and one Maxim might advantageously be placed there if adequate protection is not assured from the more forward position. In any case the Maxims must not be left unsupported.

If ordered to pursue, the escort should go with the guns, and the wagons must keep near infantry if protection is required, which is however unlikely.

In the case of a retreat the escort must hold the ground at all costs till the battery is clear away to its next position, when they would gallop after it and re-form under the shelter of the guns again.

But in all cases the paramount duty of the escort will be, not to strengthen the firing line, but to ensure immunity from raids and flank attacks and to guarantee the mobility of the guns, and this service will always be far better carried out by gunners whose interests are identical with the guns, than by detached bodies longing to rejoin and

share the fortunes of their own units on the battle-field, and not wildly excited over the performance of the batteries.

II.

ESCORTS FOR HORSE ARTILLERY.

BY LIEUTENANT A. R. G. BEGBIE, R. H. A.

Escort for artillery forms a subject which must certainly have come under the consideration of all ranks of the Royal Regiment who have served or are still serving in South Africa. Well trained escorts are an absolute necessity for horse artillery working with mounted troops, covering a wide front, and frequently obliged to retire or change positions at a rapid rate. With the present establishment of men and horses a battery is quite unable to do its own scouting, and as on service, units can seldom turn out up to strength, scouts could not be provided without seriously weakening detachments. On some occasions it has happened that a sudden call for a battery, or a section has been but tardily answered owing to the delay in obtaining an escort.

On other occasions guns have gone on, the escort being sent after them. Instructions to the commander of the escort, in a case like this, are bound to be more or less hurriedly and imperfectly given.

This difficulty about escorts has been greatly accentuated in the latter part of the war, owing to the sections being invariably used separately. The escort, told off earlier in the day for the whole battery, being probably insufficient for division into two or three parts.

When enquiring into the uses and duties of an escort, conditions vary very greatly according to the country. Mountainous, rough, wooded and enclosed country require special treatment and a great increase in the strength of the escort. To take the case of a country suitable for cavalry, such as the greater part of the Orange River Colony, and the southern portions of the Transvaal; in these parts of the country guns can fairly defend themselves, provided that dead ground, within 1000 yards of them, is held or "watched."

In the term "dead ground" is included anything in the way of dongas and spruits. By "watched" is meant that odd snipers can be kept away, and ample warning given of the approach of any numbers of the enemy, so that either the "watchers" can be reinforced in time, or the guns withdrawn to a position of greater security. It is usually the case that guns, when in action, are covering the advance or retreat of mounted or dismounted bodies of our own troops, and, except in very particular occasions, there are other friendly bodies about; hence, it is seldom they are entirely dependent on their escort alone. Thus it would appear that quite a weak screen of scouts, usually some 800 yards from the guns, is really all that is required, this screen being carefully and sensibly extended in every exposed direction, and accurately conforming to the movements of the guns. In action, say at the ideal range of

3000 yards, the single men forming the screen would be comparatively safe at 2200, dismounted, and taking advantage of all cover and concealment, consistent with a good look-out. Now it is apparent that, through no fault of their own, but through lack of opportunity in training, and from not knowing the "Gunner" ideas and ways of looking at things, few escorts from other branches of the service will do exactly what is desired by the officer who is responsible for the safety of the guns, and who is at the same time busy directing the fire, or choosing the road and position. In any case it is unsatisfactory to be dependent on perhaps a complete stranger, in some cases not of the rank of an officer, especially when very little time or opportunity has occurred for complete and full escort instructions.

This is a condition which has frequently obtained during the present war. This state of affairs is preventable in several ways:—

(1) By a permanent escort being told off for the whole or a given period. This would not be a very popular method with a cavalry regiment, as it means so many officers and men taken from the roster of regimental duties, such as outpost and picket work.

(2) Another plan, which would seem to satisfy most of the needs and requirements already mentioned, is that of letting each battery provide its own escort. If each section were to have eight spare gunners or drivers and one N. C. O., all mounted, say a total of thirty for the battery, greater independence would be secured, and therefore greater mobility. These men armed with rifles and carefully trained as scouts, would surely be of great use; they would know the ideas and requirements of their officers, and from their knowledge as artillerymen, would understand the wants and requirements of the battery.

They would by practice and training learn to conform to the movements of the guns, knowing, as they would, or should, the signals and customs of those in command. As ground scouts they would understand the possibilities of the ground, and the capabilities of the guns, better than men of other branches. They should be provided with wire-cutters, and carry three small picks and three small spades with them, one of each per section. In mountainous, rough and wooded country, much more scouting work is necessary, less speed is possible and a much larger escort is required, owing to woods and rough ground having to be searched, and to the greater difficulty of watching and holding the ground. In this case also the battery escort, weak as it is, will be of no small use; thirty trained men with rifles are by no means to be despised. In the defence of a post, or position, time usually is available for fortification, and a carefully selected line in accordance with the strength of the garrison is taken up.

In the event of heavy casualties, or sickness, the escort could be drawn upon to keep the battery up to fighting strength. With this increased establishment in a battery, signalling too could again be revived, and range-finders provided for each section, a want that has often been

felt during this war, when a battery has frequently been split up for weeks at a time.

Whether this suggestion for battery escorts would be advantageous for warfare under different conditions, in other lands, and against another foe, will be left an open question. In this present South African War they would have been of great service, and perhaps might have altered the aspect of several encounters in which the guns have suffered more or less heavily.

III.

POSITION OF WAGONS AND LIMBERS IN A HORSE ARTILLERY BATTERY ACTING WITH A CAVALRY BRIGADE.

BY CAPTAIN A. M. KENNARD, R. H. A.

In a cavalry brigade, consisting of three regiments and a battery, it almost naturally follows that when fighting, the battery will be divided up, one section going with each regiment.

As the drill-book was compiled with a view to a battery fighting as a battery and not in sections, I hope that these remarks may not prove uninteresting.

We have found when fighting by sections that 30 yards' interval between guns is the best, having regard to the saving of casualties, as that is about the greatest distance apart the guns can be placed in order to be properly supervised by the subaltern in charge.

Under these circumstances if the wagon is brought up in rear of one of the guns, the labor of supplying the other gun with ammunition is very great. Hence we have found the best position for the wagon to be covering the interval between the two guns, equidistant between them, and the same distance to the rear as laid down in the drill-book.

With regard to the limbers we have found it best to take them to the rear and halt them without reversing, as by this means the limbers afford excellent cover to the teams.

The objection to this is, I presume, that the drivers are facing to the rear instead of to the front, but we have never noticed even under hot rifle fire any tendency on the part of the drivers to go to the rear without orders.

These are two variations from the drill-book suggested by the experiences gained in some thirty fights with "Q" Battery R.H.A. and probably only suitable to the peculiar circumstances which have prevailed in this war.

THE CANTEEN QUESTION.

WHETHER alcohol in any form shall be dispensed to soldiers under military regulation or whether civil license alone is to govern their use of "ardent spirits" is no new question, as will be seen by the following extract from the *History of the Second Dragoons* ("Everglade to Cañon.")

WAR DEPARTMENT, ADJUTANT-GENERAL'S OFFICE, }
WASHINGTON, May 30, 1845. }

SIR: Many officers of experience and observation concur in the opinion that a modification of paragraphs 192 and 193, Army Regulations, and as subsequently amended (Dec. 23, 1842) would greatly conduce to the sobriety and good conduct of the soldiers at certain frontier posts. Accordingly, you are hereby authorized to exercise a sound discretion in allowing the sutler at your post to keep ardent spirits, etc., and sell the same to the soldiers of the garrison (under wholesome post regulations) with the permission of their company commanders. At the end of three months you will please report the result—whether the open, moderate use of ardent spirits, *with authority*, be less hurtful to the service, etc. I am, sir, very respectfully,

Your obedient servant,

R. JONES, *Adjutant-General.*

Colonel D. E. TWIGGS, Second Dragoons,
Com'g Fort Jesup, La.

"Among the papers of the regiment we find a mass of testimony in favor of the continuance of the regulation as conducive to the best interests of the service.

"Major Fauntleroy reports his

Decided opinion that it is an advantage to the soldier to allow him (the soldier) the privilege to buy spirits in moderate quantities, and that all regulations should have greater reference to the seller than to the buyer. * * * This is my experience for two years past at this post, and the truth of this position was strikingly exemplified during some months' stay at Towson, where both systems were tried within a short period of time in 1842.

"Captain Hardee * agrees with the above, and adds:

The usual restraints upon the appetite for drinking which discipline has imposed elsewhere have been wholly removed at this garrison, and the men have been free to partake at all times and in such quantities as their inclinations might dictate. * * * No evil has hitherto resulted from this system; on the contrary, it has worked admirably and to my entire satisfaction as a company commander. My men appreciate the liberty they enjoy, are cheerful and happy, and rarely abuse the confidence reposed in them. For the last eight months, since I took command of my company (B) only six men have been confined for drunkenness, during which time there has been a constant change of men. * * * Pay-day, so terrible in some places, passes off without any unusual excitement, and no necessity exists for sending out patrols in the neighborhood for stragglers who are either besotting themselves or "running the mail." * * *

"Captains Graham, Hunter, and Fulton bear similar testimony, and the last-named officer remarks: 'I could with propriety refer to the authorized use in the Second Dragoons, than which I know of no regiment having more sober men and so few drunkards. * * *'

* Afterward Lieut.-General, C. S. A.

"The medical officers (Surgeons Jarvis and Wharton and Assistant-Surgeon Barnes*) gave exhaustive opinions and statistics.

"Dr. Barnes reported that—

Since January 1, 1844, but thirty cases of delirium tremens have occurred in a command of seven companies of dragoons. Some of these were incorrigible drunkards, and a majority of them were but just returned from furlough.

"Dr. Wharton corroborated the foregoing, and made a comparison between the relative sobriety and health of the troops at Forts Gibson and Leavenworth, where total prohibition was attempted, and at Fort Jesup, greatly in favor of the latter post. He added that—

On a single occasion, at Fort Gibson, I have witnessed the recovery of an *entire wagon-load* of public property previously bartered away by only three companies of the — regiment for whiskey.

"Dr. Jarvis's opinion was in the form of an elaborate essay on intemperance in and out of the army, treating the subject with all the enthusiasm of one with whom temperance was a hobby. For instance :

Soldiers, with the true characteristics of human nature, will use every effort, incur any risk or danger, or undergo any labor or fatigue, to obtain that which is prohibited them. * * * But this is not the case in civil life. *There a man's living depends in a manner on his conduct, and intemperance is certain to be followed by loss of support or actual want.* Neither is the vice viewed by the world in that same mild and forgiving light that it is in the gay and thoughtless soldier or sailor, whose very privations and dangers seem to give him, in some measure, a certain degree of indulgence which is not accorded to those in other professions.

"He drives away all grief and sorrow
And drowns the thoughts of what's 'to-morrow
In a can of grog."

"The learned physician concludes that 'under all circumstances I am decidedly in favor of its being sold to soldiers under proper restrictions and a judicious control of the commanding officer.' "

Fifty-six years after the Government made the foregoing experiments history repeats itself, as the following editorial from the N. Y. *Mail and Express*, May 20, 1901, one of numerous similar press comments, shows :

"The effect of the abolition of the army canteen at Fort Snelling, the military post near St. Paul, is a remarkable demonstration of the mistaken character of that step. Hardly enough sober soldiers are left by it at Fort Snelling to guard the drunken ones. The men are driven to the saloons of the vicinity and to St. Paul and Minneapolis, with disastrous effect. It is a pity that American soldiers should have this weakness, but it is notorious that they do, and the army canteen, under the eye of the officers of a post, is the best known way of meeting it. Prohibition of drinking in the army cannot be enforced except in the case of posts which are located in neighborhoods where the general private sale of liquor is really prevented, and such posts are practically nonexistent. Liquor there will be, if the men are to have any liberty at all, and without the assurance of a certain degree of liberty they will

*Afterward Surgeon-General of the Army.

not enlist. Their personal habits cannot be regulated when they are off duty without their confinement to quarters; and the only way to get soldiers who would be willing to be confined forever to quarters would be to conscript them. We have, therefore, the alternative of the regulated canteen on one side, or wholesale drunkenness or conscription on the other."

DESERTIONS IN THE U. S. A.—Desertions in the Philippines are much fewer than at the army posts in this country. The opportunity to get away is less, and the allurements of outside life are perhaps less. Our desertions now amount to not more than from 1 to 2 per cent. of the force, while in 1872 it was as high as 30 per cent. The subjoined table shows the strength of the army every year from 1867 to 1895, and the percentage of desertion:

Date.	Strength.	Percentage of Desertion.
1867	50,991	26.7
1868	49,840	16.3
1869	35,762	12.7
1870	32,621	20.0
1871	30,022	30.2
1872	27,523	24.7
1873	28,412	20.5
1874	27,546	13.1
1875	23,866	7.8
1876	24,998	8.0
1877	23,718	10.0
1878	23,759	7.9
1879	24,763	8.1
1880	24,601	9.0
1881	23,572	12.5
1882	23,743	16.4
1883	23,814	15.2
1884	24,706	13.6
1885	24,816	10.6
1886	24,365	8.3
1887	24,438	10.0
1888	24,790	11.0
1889	25,564	11.0
1890	24,930	7.7
1891	24,525	5.7
1892	24,867	5.7
1893	25,670	6.3
1894	25,661	3.6
1895	25,200	5.3

Comment and Criticism.

"CAVALRY DRILL REGULATIONS."

HOLGUIN, CUBA, April 4, 1901.

The Editor of the *Journal of the Military Service Institution*.

Sir: In your issue for March, "G. H. M." comments on my paper on our Cavalry Drill Regulations. May I say a few words in reply.

I did not advocate making the command of execution invariably sharp and quick. My words were: "It is not always, nor is [it] ordinarily advisable that the command of execution be prolonged."

The reason why the recruit does not lock the piece when the instructor does not examine it at *open chamber* (par. 100) is that the piece is not loaded, and there is, therefore, no need of its being locked (par. 91). The error is not that the piece is left unlocked when not examined, but that it is locked when it is examined (par. 100).

G. H. M. says: "The very important part relating to the firing has been corrected for the rifle, and is supposed to be applied to the carbine." Perhaps I do not understand this sentence. But if I do, I should like to ask, to whom does he refer as supposing that the corrected regulations for the firings of infantry are applied in the cavalry? I have never observed any such departure from the firings prescribed in the cavalry drill regulations, nor do I know of any authority therefor.

G. H. M. disapproves my idea that a guide can determine and move on a straight line without considering two points. Straightness as understood in this discussion is relative. G. H. M. will doubtless admit that even with two points a guide will not move perfectly straight. I am willing to admit that with two points he would move straighter than with one. He would move still straighter with three or four or more. But I am satisfied that in practice, even at drill, a guide cannot be made to direct his march habitually by more than one point, and that with one point he can keep his course straight enough for all the purposes of drill and battle, mounted and dismounted. Before the guiding point is reached a new one has to be selected. Here the use of two points may come in to advantage. But if habitually selected, as it should be, at a distance, it will rarely be necessary in practice to change it for another one in the same direction. I have found it a good general rule to fix upon points on or near the horizon.

While I regard the system of our cavalry drill regulations as the best that we have had, I do not with G. H. M. regard it as perfect, as not in need of change or revision. He perhaps does not classify the errors as I would. In my estimation, the purely and strictly clerical errors are insignificant in number. As an instance of these I may cite the following

sentence (par. 96): "*Stable call* is the first call, or warning call, for stables after the assembly." There should be a period after the word "*stables*," and none after the word "*assembly*." The word "*stables*," it would seem, should be "*Stable*," see *Trumpet call* 6, page 468.

Other such instances are furnished by the Drill Signal *Face to the rear*, MARCH, 65 page 487, and *line of fours*, MARCH, 69 page 488, which are useless, and *As Skirmishers* 70 page 488, which should be *As Skirmishers*, MARCH.

The command *Fire two (or three) round* (par. 833) should read grammatically, *Fire one (two or three) round* (par. 176).

The command in par. 680: 1. *Troop right (or left or right half) turn*, 2. MARCH, should be 1. *Right (or left) turn (or half turn)*, 2. MARCH (pars. 510, 417, 152).

The distance between ranks in mounting and dismounting in line is four feet (par 326 and Definition of *Distance* page 5). It is given on page 527 as four yards.

The interval between regiments in line is 64 yards (par. 923). It is given in paragraph 925 as 164 yards.

But the errors which predominate are of a different character from these. A few instances not in my paper may be presented here, with the assurance however that the two lists will not begin to exhaust the supply.

In the school of the soldier the recruit is taught to dress by the command 1. *Two files from the right (left or centre) three paces to the front*, 2. MARCH, 3. NEXT, 4. FRONT (par. 132). In the school of the trooper he is taught by the command 1. *By File*, 2. *Right (or left or centre)*, 3. DRESS, 4. FRONT. It is perhaps not hard for the recruit to understand and obey one of these commands, say in the forenoon, and the other in the afternoon, but why tax the mind of his instructor with the memorizing and proper application of these separate and distinct commands?

The squadron being dismounted to fight on foot, is remounted by one of these commands:

1. *Prepare to mount*, 2. MOUNT.
2. Recall.
3. To Horse.

According as the horses are to be brought to the men, or the men brought to the horses, or the horses and men brought to each other (par. 815). In the school of the troop one finds but two of these modes of remounting, the first and last (pars. 693, 694). In the school of the trooper (par. 528) the squad is taught to remount by the command: STAND TO HORSE or 1. *Squad*, 2. MOUNT, neither of which is used in the school of the Troop or in the school of the Squadron.

In the school of the troop at the command, COMMENCE FIRING (par. 583) each skirmisher fires at an object of his own choice, of which he determines the range himself. In the school of the soldier and trooper there is no such firing. Par. 172, school of the soldier says: "The

object and range will be indicated in the preparatory command for all kinds of fire." * * * *These rules are general.*

In the school of the Squadron the command COMMENCE FIRING has a different meaning from what it has in the school of the Squad or of the Troop. This command, given by the major, is not executed until supplemented by the command of the captain (par. 828) or chief of platoon or squad leader (par. 833). The general rule quoted above does not hold good in rapid fire (pars. 177, 178) nor in individual fire, a designation of my own for the uncontrolled fire contemplated in paragraph 683.

I read in paragraph 833: "If the firing is to be executed by platoon, by squad, or *as skirmishers*, the captain indicates the kind of fire, number of volleys or rounds, and commands: COMMENCE FIRING." The italics are mine. There is no firing *as skirmishers*, as a distinct kind, anywhere else in the drill regulations. The term may be intended to designate what I have designated as individual fire (par. 683). But this is the one kind of fire which is not previously indicated.

If the magazine may be used in firing at will (par. 175) why not in firing volleys (par. 171) and with counted cartridges (par. 176)?

In the school of the Troop, to advance by rushes the instructor cautions *By rushes*, "and adds the necessary commands for the movement" (par. 530). What additional commands are alluded to does not appear either in this school or in that of the troop. It is necessary to go to the school of the squadron (par. 833) to learn that the instructor should add the command, 1. *Forward*, 2. RUSH. Why should the cautionary command in the squad be *By rushes* and in the squadron *Advance by rushes*?

In advancing by rushes (par. 833) the troop that makes the first rush, when they have gone "about 15 yards or to cover, if there be any," receive the command "*Fire by troop*," at which they halt without further command. The troop that makes the second rush, when they have gained their distance, are "halted"; in other words, receive the command, HALT: as to the subsequent rushes the text says "and so on," which others may be able to interpret. I am not.

In the Attack and Defense by the squadron dismounted (par. 822-841) there is too much left to the captains. The squadron commander should have more control over his command than he is allowed. It should not be necessary to give the commands which the captains are to give, as is imperfectly done in paragraph 833. Those commands should have been learned in the school of the troop. It should suffice in the school of the squadron to state the movements of the firings which the captains are to execute.

Par. 92 of the Infantry Drill Regulations, which would seem, according to G. H. M., to apply to the cavalry, says: "In order not to mislead the men, the distance announced in the command should be as nearly as possible the true distance of the objective." Referring to this paragraph and par. 172 of the cavalry Drill Regulations, are not the

Drill Regulations overridden by paragraph 663 of the Firing Regulations, which says: "When he [the enemy] approaches within continuous dangerous space of the rifle [or carbine] no further changes in the adjustment of the sight should be made as his distance varies? If the troops are firing standing, an elevation of 300 yards; if lying down, an elevation of 400 yards, should be permanently adopted." Is not the so-called *distance* of the Drill Regulations simply the elevation which the men are to give to the sight? If so, it is awkward, to say the least, to have our carbines fitted with two kinds of sight, one shooting high and the other low.

Forming column of fours from mass (par. 748) and column of platoons from line of platoon columns (par. 772) are, or should be, similar movements with similar commands. The movement in case of the mass is executed from the halt or in march; in case of the line of platoon columns it is executed only from the halt. Why should the line of platoon columns have to halt to form column and the mass not? The commands are as follows:

For the Mass, 1. *Column of fours on first (or fourth) troop*, 2. MARCH.

For the line of platoon columns, 1. *Column of platoons*, 2. *First (or fourth) troop*, 3. *Forward*, 4. MARCH.

In the school of the troop mounted the ground scouts go out at the command *Form for attack* (par. 642). In the school of the squadron mounted they move out at the command MARCH (784). In the school of the squadron dismounted they move out "before forming for attack" (821). Is it necessary to have a way of sending out the ground scouts and patrols peculiar to each of these cases?

In the school of the squadron we are told how to form in echelon (par. 777-779) but not how to reform in line. It may be practicable, but cannot be regarded as convenient, to dismiss the squadron and reform it.

In the school of the regiment the line of masses and the line of platoon columns extend intervals by dissimilar means (899-908). There is no apparent reason why the means should not be similar.

The change of front in line of masses (par. 903), and the extension of intervals in line of platoon columns (par. 908) require a movement by squadron which is not known in the school of the squadron.

To form double column of fours, the major in the school of the squadron commands: 1. *Double column of fours*. 2. *Centre forward*. 3. MARCH. 4. *Guide right (or left)* (par. 773). The colonel in the school of the regiment commands: 1. *Double column of fours*. 2. MARCH (par. 911). There is no reason for such dissimilarity. The shorter command should be used in both cases. Paragraph 912 gives the command accordingly: 1. *Squadrons*. 2. *Double column of fours*. 3. MARCH.

In the school of the regiment there are all sorts of evolutions to be executed from column of fours, but there is nothing said as to how the column of fours is to be formed.

These errors are not devoid of the clerical element, but their correc-

tion cannot be left to clerks. They raise questions which can be answered only by soldiers of experience as leaders in war and instructors in peace.

I have reserved for the last a few suggestions which may be considered radical. These I now submit, hoping that they will fare better in the mind of G. H. M. than my former criticisms of the system of our Drill Regulations. I shall respect the opinion, whatever it may be, which he and other readers of the JOURNAL may form of them :

- 1st. The abolition of the squad as a tactical unit.
- 2d. The adoption of a line of troops corresponding to the line of platoons.
- 3d. The abolition of the platoon column and column of troops.
- 4th. The adoption of a change of front on the centre especially for the line of skirmishers.
- 5th. The adoption of a mode of dismounting to fight on foot by platoons, if not by troops, dispensing therein with mounted horse holders.
- 6th. The better regulation in general of the dismounted drill, giving it more space in the book than it has. The space given to the mounted drill might perhaps be proportionally reduced.

Very respectfully,

JOHN BIGELOW, JR., Captain 10th Cavalry.

"CLOTHING AND EQUIPMENT OF THE SOLDIER."

Attention is called to Captain Steele's article in the current number on "Clothing and Equipment of the Soldier for Service in the Tropics."

The suggestion contained in the article shows that Captain Steele has a very practical mind and bears all the "ear-marks" of the soldier's writing.

Everything he says in regard to the change of the cut of the tails of the blue shirt, or as it is to be hoped, the khaki colored shirt, so that the shirt can be worn as a field blouse, is probably true and would tend to the comfort and neatness of the soldier in the tropics. The difficulty would be in getting the soldier to wear it as a blouse.

From criticisms of our soldiers in China, and from their appearance in Manila, anything that will tend to improve their appearance and their neatness in dress is earnestly to be desired.

In regard to the campaign hat, it is believed that it will be extremely difficult to make any improvement in it except in the way of a better quality. An eighty-four cent hat certainly does not represent the most economical and desirable quality.

All that Captain Steele writes in regard to the quartermaster's shoes is probably true.

The attachment of a rubber sole to the present leather sole would increase the protection to the foot and would also make the shoe last

longer on a wet "hike." Also the rubber heel, which is at present being worn so much in the United States, would be an improvement.

The quartermaster's department is at present issuing a lighter weight blanket. The new blanket weighs three pounds instead of five, but has a cotton warp instead of woollen to give greater strength to the blanket.

It is suggested that the rubber poncho would be improved by making the rubber part khaki colored, spread on khaki cloth of light weight. The quartermaster's department is also investigating a khaki colored mackintosh coat, and also a khaki colored mackintosh poncho. The coat has the appearance of an excellent article, being fairly light in weight and being waterproof. The mackintosh poncho is too heavy, unless the intention is to use it as a blanket and dispense with the woollen blanket altogether.

The abdominal bandage rage certainly died a sudden death after the American soldier tried to wear the bandage in the tropics. One reason was that it did not ward off the cause of most cases of diarrhoeal disease. It is probably true that the cause of intestinal disorders is of a germ nature, which is taken into the system by the drink or food, and when soldiers found they had the disease and the bandages at the same time, they threw away the bandages.

W. D. CROSBY,
Major Med. Dept.

"CLOTHING AND EQUIPMENT OF THE SOLDIER."

Captain Steele has evidently given close thought and observation to clothing in the tropics, and presents some excellent suggestions, but I most essentially differ with him as to the value of the abdominal bandage; new things are not necessarily bad. While in Cuba and the Philippines, I constantly advised, not ordered, the officers and men of my regiment to wear it; don't believe that it was generally worn; rather think that the pattern and material of the issue kind were unfavorably regarded, while the ribbed-elastic-woollen bandage is liked and is certainly comfortable, and speaking from absolute personal conviction, I believe that they are a health-saving addition to the clothing of inestimable value; troubles which formerly existed disappeared with their use, and it is only fair to give credit accordingly. These bands need not be of the Dr. J. fabrication, indeed other makers are equally good and 40 per cent. less in cost. Major Louis Seaman, of the Medical Department, to whom so many of our comrades are indebted for relief from pain and restoration to health, has remarked, that if the digestive organs are all right, you may swallow a pint of microbes with impunity: he is right in this every time and these bandages care for and protect the digestive organs: the digestive functions are extremely sensitive to the slightest cold or draughts of air, and exposure when overheated at night, throwing off the covering blanket, leaves a vulnerable part of the body open to attack; here the abdominal bandage puts in its good work. My

remarks are confined particularly to this bandage from its importance, but I am tempted to add, do not permit the wearing of a slouch 'hat except on actual campaigning and marching, and then the issue pattern is good enough, but the material should be of the best, cost will be trebled, but 'tis worth it. Troops in permanent camp should be kept up to the military standard of neatness in dress and head-gear: the white or khaki colored helmet is soldierlike, and should be insisted upon; have the Regulations as to wearing the campaign hat observed. A soldier's value is not enhanced by permitting slovenliness—which leads to other undesirable acts. At a review by our old friend Frederick the Great, many of the soldiers lost their hats, giving as an excuse, the high winds blowing during the review, the amiable Frederick ordered the review repeated and that any soldier losing his hat would be shot; none lost either their hats or their lives. The moral is obvious as to the helmet. I, however, regard the busby as a better headdress for dress occasions.

J. W. POWELL,
Colonel, U. S. A.

"MILITARY TRAINING IN SECONDARY SCHOOLS."*

Military drill, in some form or other, has been in vogue at preparatory schools in this country and in other countries for many years, and the result is that at all schools where it is properly handled nothing but great good has been accomplished, and the school principals continue to strongly advocate its merits, perhaps none more strongly than the Rev. Mr. Gull, head master of the Grocers' Company's School, England.

In an article published recently in the Royal United Service Institution Journal, and referred to above, the extension of the system in England, so as to include boys of the public schools and *younger* ones in the schools where it is *now* in use is advised. While most of Dr. Gill's recommendations are without doubt most excellent and entirely applicable to the schools of this country, at the same time the following are others of his statements to which we in American schools must take exception. They are in general, (1) that military training cannot be made compulsory by reason of the expense, (2) that uniforms are not necessary, (3) that proper military instructors can be made by giving to any teacher a summer course in the drill and (4) that the drill cannot be given in school hours, and therefore must take place after school.

There are many in this country who promptly offer as an objection to military training extended to the public schools the matter of expense in securing uniforms and equipments. Surely a plain and serviceable uniform will cost no more than an ordinary civilian school suit, and for the poor boy who can afford but one suit the uniform would well take that place. Why should not the state or the city that fur-

* See "Military Training in Secondary Schools," etc., (Translations and Reprints.)

nishes to the public school boy books and other school paraphernalia also furnish him the necessary military equipments?

It is a big mistake to imagine that any teacher can in a short time become fit to properly adapt military discipline in a school. It takes quite as long, or longer, to become a proficient adapter of military training among boys as to become a proficient teacher of mathematics. A drill master he *might* become in a short time, but military training implies infinitely more than the simple physical drill. Any form of gymnastics could be made to accomplish as much, or more, physical good for the school boy as the drill. Unfortunately here is the mistake made by school principals, in confining their military training to the drill floor and in giving it no place whatever in the rest of the school life. I heartily believe that the training carried out in such a way would better be discarded.

The boarding-school in the country is, of course, the place where military training can be developed the best, and statistics show that very satisfactory results have been produced.

It is to the public and private day schools in the large cities that we must look for ground in which to extend the military training system.

Experience has proved the following to be the best course to pursue in adapting military discipline to such schools:

First, of all, the commandant must be a young, vigorous and competent man, who has experienced and appreciated the advantages of rigid military training and discipline himself, and who is enthusiastic in his work. He must be more—he must be a regular instructor in some of the principal studies of the school; he should stand in close accord with the principal and the students, and should be about the building and watchful at all times of the bearing, order and general discipline of the school. A man who simply sees the cadets on the drill floor and has no connection with the regular school discipline can accomplish nothing but some physical exercise, and is no substitute at all for the commandant and school disciplinarian.

The drill should occur three times a week, *during one or more of the regular periods of the school session*, for boys will feel that they are "working over time" and that the drill is an outside feature when it is put at a time that is taken from their recreation periods. Such feeling will not produce a healthy sentiment among them. The recitations need not be lost. On drill days let all the school periods be shortened by ten or fifteen minutes each, and in that let way the time for drill be made without affecting any one recitation to any marked degree.

It should be understood that the drill is optional, but that when the student once enlists, it is with the understanding that he may not resign until the end of the year, and that he binds himself to obey strictly all orders or to abide by the consequences. Parents also should understand this perfectly. There must be worn on all drills by all cadets, a neat and plain uniform which is to be kept in good condition. Slouchiness

and carelessness of person are the first things to be taught and to be overcome.

There should be detailed each day by the commandant one of the commissioned officers to act as officer-of-the-day, who should wear his uniform and be stationed at some prominent part of the school building, with orders to go wherever his attention may be needed. He should at all times impartially enforce every regulation of the school and report offenders, who should be properly punished.

The principal should keep before the minds of *all* the teachers the fact that there must be required of the cadets in every classroom the same manliness, military bearing and discipline as is required in the armory and in the halls, and then the work is done. The cadets will feel that they are governing themselves, will move quietly about the building, will acquire a respect for their superiors, and will become interested in their work rather than be prowling about the building scheming and contriving plans for annoying their teachers.

Boys naturally take to military ways of doing things. In their games they choose as leader some one whom they think competent to command, and they invariably give him their true obedience. Every boy is fond of the brass buttons and the bright cloth of the cadet uniform, and he resolves that he will be a soldier some day. Tales of battle on sea and on land and accounts of wars and military adventures interest him most.

It is by reason of this natural tendency that the promoters of military training are able, with material that often appears hopeless at first, to accomplish much, but would be able to accomplish still more if the heads of schools and school boards would realize the great good of the training and would give it proper encouragement. In the words of General Schofield: "Success in all the affairs of life has ever depended upon system, which is a marked characteristic of the result of discipline, and the tendency in all the successful affairs of life is toward such a system as military discipline inculcates."

J. C. GROFF, Late U. S. N.,

Major and Commandant

Cadets Hamilton Institute.

New York, June 1, 1901.

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Reviews.

Military Hygiene.*

THE Medical Department of the army has reason to congratulate itself upon the completion of this comprehensive treatise by one of its talented members. This work indicates an enormous amount of research and careful observation, and the author acknowledges the assistance of that guiding hand in hygiene, the distinguished sanitarian, Dr. Chas. Smart, U. S. A. In the shadow of the Library of the Surgeon-General's Office, the earnest author has taken commendable advantage of the vast collection of literature available for such a compilation. It is to be regretted, however, that the bibliography has been almost entirely ignored; this is a serious omission, for a key to the many works consulted in its preparation would have added immensely to its value as a book of reference. Embracing twenty-one chapters, with nearly 1000 pages, the book is rather unwieldy to handle, and would have been more satisfactory had it been published in two volumes.

In the chapter on "the Selection of the Recruit," the author presents some very interesting statistics. A table of nativity of recruits shows that from the years 1892 to 1897, inclusive, the percentage of foreign born steadily decreased. The author condemns the enlistment of recruits below the age of 22 years. Quoting Lavarán, of the French army, who claims that the younger recruits furnish the majority of disabilities in hot climates, and Coustan, who contends that young soldiers should never be sent to tropical regions, we have some interesting arguments in view of the prospects of tropical service for our own troops hereafter. Dr. Munson says, that colored recruits should never be enlisted after the age of 25 to 26, "as at that time they are liable to be physically stiffened and mentally dulled." He shows that the minimum height of our recruits has steadily been reduced. At the time of the Revolution it was fixed at 5 ft. 5 in., but in 1835 it was raised to 5 ft. 8 in. With such a high average, the army at that period must have resembled the famous grenadiers of Frederick the Great.

The second chapter, devoted to the "Development of the Recruit," is particularly interesting at this time, for it is only within the last five years that any particular attention has been devoted to this branch of military training.

The writer utters a timely warning against the effects of overtraining upon the heart muscle; he contends that the British system of training recruits, so as to over distend the thoracic cavity, is at the expense of the heart and abdominal viscera, producing enlargement of the former and impaired function of the latter organs. In his enthusiasm for the good results of physical education he reaches an extreme degree of optimism, when he states that "physical training promotes efficiency through the diminution of venereal affections." This strikes one as somewhat a strange confusion of ethical and physical laws, and it would be difficult to prove that athletes are in the least more moral in a sexual sense than their less perfectly developed brothers. He wisely condemns

* By Capt. E. L. Munson, Asst. Surgeon, U. S. A. New York, William Wood & Co., 1901.

the custom of early morning drills before breakfast, when "the nervous system is more or less lacking in energy, and the muscles relaxed."

Blaikie's table of comparative measurements, showing the ideal proportions of a well developed man, is an interesting guide to teachers of gymnastics.

Dr. Munson states, quite truthfully, that the American soldier "cannot be regarded as an athlete or even well trained physically." "Physical training," he says, "should not be merely tolerated, as has been too largely the case in our service, but should be officially prescribed rather than encouraged."

The authorized exercises should be rational and simple; the present tendency is rather to induce excellence in feats of agility than to develop the muscular system regularly. The author recommends the establishment of schools for athletic training at Leavenworth and Ft. Monroe. "Sound health and general increase in strength," he says, "are not obtained through the use and development of special muscles, * * * but in the synchronous and harmonious development of all the muscles of the body." In a section devoted to "Mental and Moral Education," he describes the model soldier as of "manly character, willing, brave, steadfast, zealous, enthusiastic, of good humor and possessed of initiative."

It is to be hoped that this high ideal may some day be reached for all our men, but there are grave reasons to fear that it will not be in our generation. Chapter 3 is entitled "The March on Campaign." This is interesting, for until recently, little attention has been paid to the conservation of energy on the march; and in this respect the French army leads. De Raoul's method of marching and running, known as "pas de flexion," has met with remarkable results. A gait very similar has been in vogue for many years in the Mexican army and is somewhat the posture assumed by the Apache Indian runners. In brief, "pas de flexion," consists in flexion of the ankles, knees and thighs with forward inclination of the trunk. The author advocates the policy of changing the front and rear of a command from day to day, thus equalizing the strain. The average march for our troops is fifteen miles daily, which is 1-2 miles greater than the average of the foreign armies. Speaking of heart strain, he quotes Teissier, who in 1894 observed in a number of soldiers (who had marched 50 miles) that the apex was forced to the left, the base increased in diameter and the venous circulation impaired; this condition is due probably to a dilation of the right side of the heart and is often accompanied by well defined murmurs. The action of the heart may thus be seriously impaired, through stretching and separation of its muscular fibrillae. Chapter 4, treating of water, contains a careful *résumé* of the various well known treatises. Lavan, he states, records a great reduction in the percentage of sick from diarrhoeal diseases since the introduction of the Chamberlain-Pasteur filter. Discussing the much disputed question of the introduction of malarial organisms through drinking water, he quotes Boudin of the French army, who offers a reasonable proof of its probability. Boudin gives an instance, where in a force of 120 men travelling by ship from Algiers to Marseilles 13 died *en route* and of the remainder, 98 were affected by well defined malarial fever. It was shown that the men had here been supplied with water collected from marshes.

Of the many filters for the purification of water, the Forbes-Waterhouse, officially adopted by the U. S. Army, is recommended as the simplest, most compact and most satisfactory in its results. A very clear diagrammatic description of this apparatus is given and a study of this device is suggested to all

interested in the subject. The advantages summed up by a board of officers designated to pass judgment upon this filter are as follows: Sufficient sterilization by heat, without complete elimination of the natural gases of the water; destruction of all living micro-organisms, except a few saprophytes; can be operated for 24 hours without renewing the oil and at a cost of only 4 cents per hour; a very slight increase in the temperature of the water as it emerges from the filter; its durability and slight risk of breakage; facility with which the apparatus can be assembled, merely a wrench being required; ease with which it can be cleansed. Discussing the chemical purification of water, the author quotes Teich, who proved that alum has little effect as a germicide, a solution of 1-3000 being powerless to destroy the typhoid and cholera bacilli even after an exposure of 24 hours.

The author states that the U. S. Army ration is more than sufficient to meet the demands of active muscular labor in a temperate clime, but is deficient in fats and proteids for service in cold regions, and for service in tropical regions these components are in excess.

Comparing our own with the German army ration, it is seen that the maximum ration of the latter is inferior to ours, except as to proteids, in which the German issue is too high. As to variety of food, he says, "special regulations for the soldier's fare cannot be promulgated to suit each locality and circumstance"; this, he implies, must be left largely to the judgment of individual commanders. A temporary change of cooks is advisable to avoid monotony, and he urges constant supervision of the table by company commanders. The author cautions against wastage in serving food to the men; small portions, to be repeated if necessary, are preferable to heaped up dishes. "In one British regiment," he says, "the grease thrown out by the cooks had an annual money value of one thousand dollars." In the general mess at Jefferson Barracks, a civilian cook employed at a salary of \$1000, was shown to save twice that sum by his economy and the men lived much better than under a more wasteful cuisine. In the British service, more attention is paid to the subject of cooking, special schools being maintained. Woodruff, of the U. S. Subsistence Dept., observed that in a garrison of 440 men, during ten days, the wastage was as follows: bacon, 1.40 per cent., pork, 8 per cent., bread, 3.30 per cent., beef, 22.50 per cent., potatoes, 27.09 per cent., prunes, 33 per cent., cabbage, 45 per cent., ham, 12 per cent. What a remarkable object lesson this to army cooks!

In the Russian and French armies the rations are issued in large mess pans, out of which 6-8 men eat at one time. This reminds one of pigs at a trough. The author condemns the practice of giving long term contracts to beef contractors.

He gives the percentage of tuberculous cattle in various countries, as follows: United States, 20-30, Germany, 25 per cent., England 12 per cent., Mexico, 34 per cent., while it is rare in France. A description is given of the preparation of "tuberculin" by the Agricultural Dept. To meet the demands of the service refrigerating plants have been established in Manila having a capacity of 5000 beeves, 8000 sheep, and other perishable articles. Refrigerated beef is far superior to that slaughtered in the tropics, in which the meat is strong, tough, and devoid of fat. There is an interesting discussion of the various emergency rations employed in our own and foreign armies and a valuable table showing the percentage composition of some concentrated and preserved foods.

Considering the subject of uniforms, the author shows that experiments by Gerard and Devismes on the relative conspicuousness of different uniforms indicate that next to white, our blue is the most evident, while the ashy brown, corresponding closely to the khaki, is the least. The Russian soldier wears in summer, when the verdure is the background, a green tunic, and when the snows cover the ground dons a sheepskin overcoat of a grayish hue. The author has demonstrated by experiments that the blue uniform or overcoat of our army will absorb at least five pounds of moisture in a moderate rainfall. Therefore on a march of 16 miles, the soldier would carry an excess weight equal to 80 lbs. one mile.

Dujardin's method of water-proofing clothing, which is described in detail, consists of an immersion bath of a solution of acetate of aluminum, which deposits upon drying a fine precipitate of metal in the meshes of the cloth. By this simple process there is very little interference with the passage of air, and Hiller found that while an unimpregnated cavalry cloak was saturated in less than half an hour, one protected by this solution did not permit the absorption of rain water when exposed for 24 hours.

This water proofing has little effect on the color of the uniform, and adds slightly to its weight; it is inexpensive, the cost of water-proofing the entire clothing of 100 men being no greater than 1 cent per man. The English have adopted the process.

Basing his experiments upon the well known water-proof qualities of Navajoe wool, the author has formulated a solution for the incorporation of fat in woollen garments as follows: 20-30 grains of lanoline previously dehydrated, dissolved in one litre of benzene. The clothing is immersed in the solution and hung up to dry, three litres sufficing for the protection of the entire outer clothing of a soldier. The clothing is permeable both to air and perspiration, while little water from without is absorbed. The chapter on military clothing and equipment is one of the most instructive in the book and it is regretted that space does not permit further discussion of its many interesting details.

In view of the sad results of infected camps in our recent war with Spain, Dr. Munson's deductions on this topic are particularly pertinent at this time.

According to the investigations of Robertson and Gibson, ground freed from grass and sprinkled with nutrient solutions would retain the typhoid germs in an active state for a period of six months. The organisms were able to penetrate a stratum of earth downwards for 3 inches and upwards 15 inches. Sandy and peaty soil are unfavorable to the typhoid germs by reason of the encouragement offered to the growth of saprophytes. The remarkable faculty that this bacillus has of travelling upwards through soil shows how little dependence can be placed upon the sprinkling of a few inches of sand on the contents of latrines.

The author condemns the practice of digging a latrine for each company; preferable is a large excavation for battalions with a seating capacity of 10 per cent. of the command. Speaking of the Bissel incinerator invented by a medical officer of the N. Y. National Guard, Dr. Munson praises its ingenuity, but shows that the proposition to provide an army of 10,000 men with these travelling privies would require at least 100 vehicles and 400 horses. *Mirabile Visu!* Imagine the impressions produced by such a caravan upon the unscientific.

This chapter on the sanitation of camps is particularly commended to the younger class of officers of limited field experience.

In a section entitled "The Personal Cleanliness of the Soldier," Dr. Munson shows that in 1886 the constant non-effectiveness of our troops was 4.1 per cent.; in that year the War Department commenced the introduction of bathing facilities in barracks. From 1886-1896 the per cent. declined to 3.1 per cent.; and he assumes that it is fair to conclude that this decline of one per cent. is partially, at least, attributable to the greater cleanliness on the part of the enlisted men.

In most of the foreign armies systematic inspections of the persons and clothing of the men are required. Of the various systems of bathing, he naturally gives preference to the "rain bath"; its advantages are its slight first cost, simplicity, economy in construction and as a water saver. The secretions from the skin are promptly removed, thus obviating the constant care demanded by the tub system. It takes less of the soldier's time and is healthier and more refreshing in its effects. The "rain bath" has been generally adopted in the French army. In the Russian, the vapor bath is the official method of obtaining personal cleanliness; in the Dutch and English the tub system. In the British service the baths are unprovided with warm water, and as a consequence, in winter season, most of the men go without bathing. The Clow system is in use in such of our barracks as are provided with shower baths, while the Schaffstaedt apparatus has been adopted on the transports. The latter provides water heated to any desirable temperature through the agency of a jet of steam from the boilers of the vessel.

This device is in use on many of the transatlantic steamers, and is manipulated by means of the "universal mixer," through whose ingenious mechanism any degree of temperature can be obtained.

The author calls attention to the necessity for a more careful hygiene of the mouth, and contends that the American soldier, however, has better teeth as a rule than those of foreign birth, and there is less caries among the negro than among the white soldiers.

"Men," he writes, "afflicted with foul or diseased mouths are annoying, if not actually dangerous to their comrades." Decayed teeth, he insists, should be promptly filled. "It would be of much advantage," he says, "if dental surgeons were provided by the government to care for the teeth of the men while in the field or at isolated stations." Those of us who have served at remote frontier outposts, hundreds of miles from any dentist, can cordially endorse this proposition, and when the memory comes back of sleepless nights and swollen cheeks, we can rejoice that congress has recently seen fit to provide a corps of dentists. Dr. Munson advises the use of soft tooth brushes and a simple dentifrice of wood ashes or wood charcoal. He recommends that all barbers in the army receive instructions from medical officers in the hygiene of the hair and skin, and be taught how to sterilize instruments and brushes. Since the government no longer recognizes the company laundress, he says, soldiers at many posts have considerable difficulty in keeping their clothes clean, and therefore the establishment of post laundries should be undertaken as an adjunct to the post exchange.

The use of petroleum in combination with soap has been tried in the German and Russian armies with good results, rendering the clothes much brighter and with much less deterioration. The proportion of one gramme of mineral

oil to each litre of soap water, is advised. In connection with the subject of personal cleanliness, he quotes Woodhull, who says: "Dirt that is hurtful is not the mud of the highway or field nor the dust of the parade caught on the outside of the shoes and clothing; it is the cutaneous débris, mingled with the dust and dissolved in perspiration soaked in the underclothing; organic dirt that offends the nose of the soldier; that depresses the subject and may poison his comrade."

In our army, the chapter on Military Statistics shows the loss of time from sickness for ten years, 1886-95, to have been 14.64 days for each soldier; it was less among the colored troops than the white. The general average for the British army from 1887 to 1896, was 21.38, but among the troops at home stations, the loss of days was about the same as ours. Comparing the loss of time among civilians with that of our soldiers, Dr. Billings has shown that it is *five times* greater in the latter; for every death among our troops in the year 1897 there was an average loss of 3.867 days of sickness. This disproportion is due to the fact that many soldiers foist themselves on the hospital to avoid unpleasant duty, a privilege often denied the working man, who thus would forfeit his day's pay. Comparing the nativity of the losses from death and discharge for seven years, 1890-1896, the Scotch give the smallest rate, 18.97 per thousand, the Canadians and Irish the greatest, namely, 23.03 and 19.98 respectively. By comparing the ratio of the last class with the total losses from alcoholism, we have a possible explanation of its high non-effective.

Comparing the white and colored troops, it is seen that the approximate loss in the two classes is now about the same, although the annual reports for the 20 years previous to 1888 show a marked disproportion in favor of the whites.

Rank has its weight in the study of disability. For seven years, from 1890-1896, the sick rate for officers was 765.69 per thousand; for the enlisted force, 1258.90. But the average death rate was higher among the officers in the same period, 44.27 per thousand to 37.63 for the enlisted forces. This contrast, he explains, is due to the fact that the military career of the enlisted man ends on the average at 44 years, while the officer continues his service to a much later period of life. Under the age of 25 years, however, the admission rate among officers was 784.20 per thousand, contrasted with 1359.63 among the enlisted men, while the non-efficiency rate for the former class was only 29.61 to 39.52 for the latter, a difference of over 10 per thousand. The author considers this contrast due to a lack of sanitary knowledge among the younger soldiers.

It is more reasonable to suppose, however, that more comfortable quarters, better food, less homesickness and non-exposure to night air on post have more weight in determining these figures, conditions beyond the control of the soldier, whatever his knowledge of hygiene. The results of tropical campaigns on the part of the British and French armies show some remarkable contrasts; in the Madagascar campaign in 1895, the French mortality per thousand was 300. In our campaign in Manila in 1898 the loss was only 8 per thousand.

The chapter entitled "Diseases of the Soldier" is valuable by reason of our recent advances in the knowledge of preventive medicine, based upon a more intimate acquaintance with the bacteriology of infectious diseases.

Discussing Asiatic cholera, one of the most fatal diseases when it attacks a compact body of troops, the following general measures should be adopted: Isolation hospitals far from the main body; food for the troops should be

obtained from a distance and pass through the infected district in unbroken packages; when the disease prevails in the vicinity, a careful isolation and observation of every case of diarrhoea; careful bacteriological examination of the dejecta of all suspects and convalescents, and the latter should not be released until the discharges are absolutely free from bacilli; all filth on or near the military reservation should be destroyed, and a thorough painting, whitewashing and cleansing of all parts of the garrison is recommended.

The water should be boiled or sterilized by the Forbes-Waterhouse apparatus; even washing water should be sterilized, and as the cholera bacillus does not thrive in acid media, the use of acidulated drinks is logically indicated. Tea and red wine seem antagonistic to the growth of the germs. Food should be carefully protected against flies, which as we have every reason to know from recent sad experience are prone to spread disease. Discussing preventive inoculations, as practiced by Haffkin in India, a few statistics are worthy of notice: Simpson, an English health officer, who has devoted much time and study to these inoculations, claims that the blood serum of protected individuals has a destructive effect on cholera bacilli 200 times as great as that from the unprotected. Among 1526 unprotected soldiers at Dinapore and Cawnpore, there were 25 cases, while among 268 of the same garrison protected by inoculations there were no cases.

Among 654 unprotected civilians, there was a mortality of 10.86 per cent., while among 402 protected living in the same houses, there was a fatality of 2.99 per cent. These figures, if correct, certainly speak well for a means of prevention, which has, however, met with considerable scepticism.

Dysentery.—As this disease is undoubtedly spread though drinking water and food, its prevention is based upon practically the same principles carried out in the prophylaxes of enteric or typhoid. The disabilities in our army in the last few years have been naturally very great from dysentery. Dr. Munson cautions against the use of coarse or indigestible food during the existence of an epidemic, the careful sterilization of the drinking water and thorough cleanliness of the clothing, persons and barracks. He advocates the use of the abdominal bandage—medical officers returning from the Philippines, however, are not so enthusiastic as to its virtues. The defect with the average abdominal band is its tendency to slip upwards during exercise, thus alternately exposing and covering the abdominal muscles. It is reasonable, therefore, to suppose that alternate warming and chilling of the belly results.

In connection with the subject of dysentery, the observations of Flexner as to its etiology, recently published, show that there are as many varieties of micro-organisms producing the disease as there are clinical types. The causes and prevention of typhoid fever are subjects which interest us above all in this study of disease and the many lessons we have learned have been dearly bought. The impression has prevailed for many years that drinking water and water alone has been the medium of transmission for the typhoid bacillus. Dr. Munson shows by a variety of instances that the organism can enter the system through the agency of the air, food, soiled hands, bedding, clothing, the feet, or faeces of flies, etc. But, as a rule, food, drink and saliva are the most potent media for its spread. The danger of attending or nursing typhoid patients is shown in the medical reports for 1898. The admission rate per thousand of our army at large for that year from typhoid was given at 88.56, while the rate for members of the hospital corps was 193.41 or more than 100

per cent. greater. The author shows that the typhoid bacillus may be transmitted to others through the body of one immune to its infection, one in whom through unexplained conditions it finds no congenial soil. This fact explains outbreaks of the disease at remote frontier stations where the existence of typhoid was previously unknown and its spread by drinking water practically impossible; these not infrequent outbreaks have been explained by medical officers as instances of the *de novo* development. As the germ may retain its virulence for several months in clothing, etc., the disease may break out in an army far removed from its inception.

The indications in the way of prophylaxis are: Sterilization of water by means of the Berkefeld or Forbes-Waterhouse filter; water tanks should be well covered to prevent the entrance of dust and the water drawn from faucets.

In the outbreak in 1898 in our army it was estimated that fully 50 per cent. of the cases were not recognized as such by our medical officers;—a percentage of error not so great, however, as has been shown to exist among civilian practitioners. The prompt use of the "Widal" and "Diazo" tests are absolutely necessary to insure a correct diagnosis, although it is probable that at least seven days must elapse before the patient will respond to these experimental proofs. The "Widal" is the more reliable, and is based upon the tendency that blood serum from a typhoid patient has to arrest the motility of the typhoid organism and a crowding or clumping together of the scattered rods. Dr. Munson says that fully 95 per cent. of all cases according to reports of various investigators correspond to this test.

The author condemns the use of latrines in all permanent camps, the trough, tubs and crematory being safer. Except in most urgent instances, a command should never occupy a site recently vacated by another.

How dangerous has been the neglect of this precaution was painfully illustrated at the N. Y. State Camp at Hempstead and at innumerable other points of mobilization.

So much has been written of late in the lay and scientific journals as to the etiology of malarial fevers and the strange cycle of existence, through which the plasmodium passes before its entrance into the human subject, that it seems hardly necessary to repeat in this review the interesting discussion of the subject which Dr. Munson has compiled.

As the mosquito is the usual medium for the transmission of the disease, its destruction in the developed and larval state is the only rational means of prophylaxis. For this purpose, kerosene, petroleum and infusions of tobacco or chrysanthemum powder should be thrown into cesspools, drains, sewers, ponds or any point of collection for stagnant water where the larvæ are deposited. To two distinguished medical officers of our army, Drs. Reed and Carroll, is due the recent discovery that yellow fever, like malarial fever, is spread through the agency of the mosquito, as a host, although up to this time the organism itself has not been isolated. With this knowledge the prophylaxis of yellow fever will correspond closely to that of malarial infection, and we have reason to believe that future statistics of this disease will be much more encouraging.

It is, therefore, a source of gratification to military men to know that the cause and prevention of these two terrible pests have been learned through the patient and fearless investigations of army surgeons.

Discussing the habits of the soldier, Dr. Munson shows that in the decade from 1886-1895 alcoholism stood sixth as a factor in mortality statistics.

It has, however, steadily decreased, as is shown by a very interesting table; from 1870-1897, the rate declined from 48.70 to 27.80 per thousand for the latter year. In 1898, during the war with Spain, it fell to 15 per thousand. To the credit of the colored troops, the author shows that the rate for the white troops was 42.37 while that for the negro only 4.89 in the same decade. Nativism plays an important part in alcoholism, for the author shows that in the seven year period from 90-96, the Irish gave the largest rate, 90-96 contrasted with 28.51 for the American. The artillery gave the highest, the cavalry the lowest rates.

Of foreign armies, statistics show the rate to be highest in the British service, and smallest in the Italian and Spanish. In the seven years, 1887-93, of 134 suicides, alcohol was rated as a direct cause in 31.3 per cent.

Dr. Munson is most emphatic in his condemnation of alcohol even in small quantities and offers some very striking statistics as to its dangers in the army; "acquaintance with military duties," he says, "does not compensate for the pernicious effects, either direct or indirect, produced by the drunkenness of old soldiers."

In an attempt to define the meaning of drunkard, he states that it is the opinion of many authorities, that one who imbibes more than two ounces of pure alcohol daily may properly be classified in that category.

The treatment of acute alcoholism by catharsis, emesis and washing of the stomach he commends as an effectual remedy. "In determining the occurrence of alcoholism," he writes, the example set by officers in this respect is of great importance. Nothing is more certain than that a drunken captain will have a drunken company."

This seems rather an extreme view, for few will admit that our soldiers are so devoid of individuality or self-control as to pattern themselves after a vicious commander. His example might have weight with a few weak characters, but the chances are such, exceptions need not such a precedent where the opportunity for drink exists.

On the subject of the canteen he offers some figures, particularly interesting at this time. For seven years immediately preceding the establishment of the canteen, a yearly average of 1214.8 men applied for medical treatment, while for six years subsequent to its establishment, the rate was reduced to 928.4 or 23.6 per cent. less. These figures might appropriately be handsomely engrossed and presented to the misguided members of the so-called "Women's Christian Temperance Union," whose meddlesome interest in the welfare of our soldiers is undoing all the good results of these years. Dr. Munson discusses this subject most fully and it is believed that its urgent advocates will be surprised at the remarkable improvement in the morals and physical well-being of our soldiers, traceable to this wise institution.

The author shows that while syphilis has greatly decreased among our troops since 1868, gonorrhoea in the last fifteen years has been on the increase. The reasons for the latter fact he does not explain. The regulation of prostitution and the examination of prostitutes has been carried out in the province of Pinar del Rio and on the island of Jolo, in the Sulu group, with a remarkable diminution in venereal diseases among the soldiers.

Of the final chapters in this useful work, that on the hygiene of the tropics, is of the utmost importance to the officer, for it is probable that a large percentage of our forces will have to do with life in hot regions for who knows how long.

One topic discussed at length in this connection, that of food, the author is well prepared to handle, as his recent prize essay has demonstrated. The views of Seaman, who has devoted much time and personal observations among troops campaigning in the tropics, seem to show the necessity of more careful study of the dietary of the American soldier; he claims that a large percentage of the casualties among our troops result from the ingestion of coarse and badly prepared food. Smart, Woodruff, Munson and others contend that our ration is bountiful and as varied as any army issue in the world, while Seaman takes the ground that our troops in campaign are not in a position to exchange saleable articles for such light food best adapted to the climate. In concluding this inadequate review of Dr. Munson's work, several facts force themselves upon the thoughtful reader: The object of the good military leader is to get the most he can out of his men. All the efforts of military science are directed towards this one object and the questions of skillful tactics, improved ordnance, and more modern fortifications are of no more importance in the final results, than the preservation of the health and therefore the effectiveness of the army. The field of military hygiene is vast, and its study might properly be embraced in the course of instruction at West Point and the post graduate schools, where at present it is merely touched upon. Had our volunteer officers known the rudiments of this science, how many precious lives would have been saved to us in all our wars. The young officer, full of hope and vigor, unconsciously represents the notion that it is necessary to conserve his energies—in fact, often considers this subject of hygiene effeminate, until he loses the most valuable possession in the world, his health, and thus his efficiency as a fighting man. Dr. Munson's book is handsomely bound and printed, and its price, about \$8, probably as reasonable as books of the kind usually are. But it would reach more hands in a simpler and cheaper style, while its valuable contents would be none the less digested. This fact has explained why Woodhull's attractive little book is widely read by men and officers of the line, and has therefore, done good missionary work in the field of military hygiene.

N. S. JARVIS.

A Sailor's Log.*

This is an interesting narrative and well told. There are no resting places in it, where the reader feels willing to stop over until to-morrow. At the end of every chapter a strong desire to know what happened in the next, induces, not to say compels, the reader to proceed. All of which goes to prove that the narrative is interesting, and the fact that it is easy to read proves that it is well told. Mountains of books are turned out every year. Science and religion, philosophy and history, fact and fiction, anything and everything furnish themes, and many of the works are classified as literature. But how few of them are easy to read. And yet, that should be the crux of excellence. The reader should not have to wrestle with an author's words to find out his meaning. No such wrestling is needed to master the meaning of the author of "A Sailor's Log." It stands out in every case, clear and distinct.

When the future historian takes up the task of writing the history of the United States during the latter half of the nineteenth century, he will find abundant materials. The Rebellion Record will be to him what one can imagine the Western plains would have been to a solitary buffalo some forty years ago—so vast as to be almost discouraging. Such a buffalo would naturally be-

* *A Sailor's Log.* By Rear-Admiral Robley D. Evans, U. S. Navy. D. Appleton & Co., 1901.

come fastidious. Only the daintiest tufts would be selected for his morning meal. And so it will be with the future historian. He will turn away from that vast but confusing magazine of fact—the Rebellion Record—and regale himself with such delicious titbits as are to be found in volumes like the one before us.

It has been said that the boy is father to the man. The saying may not be strictly true. But the spirit of the man is in the boy. Education, training, and experience may modify its manifestations, but it is the same spirit. It is interesting, therefore, to read the records of the child, and of the boy, and of the cadet, as they live in the memory of the man after he has passed the meridian of life—in other words—to hear a spirit telling its recollections of itself. The boy had never seen the sea and yet his heart's desire was to be a sailor. This early inclination, and the perseverance and pluck with which he overcame the obstacles which lay between him and his desire are characteristic of the man whom the world has learned to admire. He was born to be a sailor, and after reading the story of his boyhood, one wonders if competitive examinations are the best way of selecting material for army and navy officers.

Passing over his education and training, and the characteristic episodes connected therewith, we find him while yet a boy doing a man's work. His experiences at Fort Fisher, and his description of the battle as seen by him, first from the *Powhatan*, second as leader of a foremost company in the naval assault, and third, as a desperately wounded and perfectly helpless man within easy pistol shot of the rebel parapet, is simply thrilling. Imagination has helped some novelists to paint the gallantry of a charge, the disappointment of a repulse and the horrors of a battle-field, but no such pictures can equal the simple statement of fact as given by this author who saw and suffered what he describes. The horrors of war are easily forgotten by the man in the street; but the man who was there, who saw and suffered them, never forgets the slightest detail. One may safely assert that chapters VIII and IX were the easiest to write of any in the book.

Cruising in South American waters and in the East, where we next find our author, although well salted with hardships and adventure, were positive pleasures when compared with Fort Fisher. One would hardly expect them to have made lasting impressions on a young mind. Perhaps he made notes—kept a diary—of his experiences. At any rate his descriptions of these cruises are full, and incidents, humorous, dangerous and instructive, stand out on every page like apt and artistic illustrations of the narrative. His visit to the government of Liberia may be cited as an example. No doubt it was hard for him to realize that he was talking to the President of an independent state; and when unconsciously he addressed the President's wife as "Auntie," the spirit that was in him was back in old Virginia and he was a boy again. One wonders as he reads the story, what may be written in the Book of Fate, over a leaf or two. May not the trained and educated negro of America turn up as the saviour of Africa one of these days?

Custom is powerful in the navy as well as in the army. "Liberty" in the old navy was a rare privilege. Consequently its true enjoyment by the men consisted in extravagance in everything. This was expected and recognized as reasonable by the officers. Like "Pay Day" in the old army it was an evil that had to be endured. To get over with it as rapidly as possible, was the ruling idea among commanders. And so the men were granted "Liberty" by

watches. The result was a terrible time on shore. Our author's ideas on the subject, and his efforts at reform are modestly stated (191). One could wish that he had dwelt longer on the subject, and given the public the results of his experiments.

Cruising in the Mediterranean, from the description, must have been delightful. The description, interlarded as it is with many amusing anecdotes, certainly is. The overawing of a Pasha, and the purchase of a large and lively octopus were things to be remembered. Of course, there were hardships to be endured even in the Mediterranean. But pleasures were largely in the majority.

But there is no place like home, not even the Mediterranean. A very unsteady ship and a stormy Atlantic were insignificant discomforts on a home run. But a ghost, visible to the whole crew was rather a startler. (209.) And that was the experience of the captain and crew of the *Congress* on their homeward-bound trip. It was a mystery and remained so for twenty-four hours. At the end of that time it again appeared, and investigation disclosed the fact, that it was a shadow and not a shade, to the great relief of the forecastle.

Flanking the landsharks was a manœuvre of which the author may be justly proud. The *Congress* was paid off at Portsmouth, N. H., and an army of bummers and boarding-house keepers lay in wait to rob Jack of his dollars. By an arrangement with the railroad people the author was able to carry his sailors off to New York without losing a dollar. (215.)

Education is undoubtedly a good thing if it is kept within the limits of utility. Our author, as commander of the training ship for naval apprentices, found that out. Full of enthusiasm, no doubt, he had the boys instructed in everything they were able to assimilate, and the result was that when their training was complete they found places as officers of merchant ships. Of course, that was excellent for the boys, and probably for the merchant service, but the navy was nowhere. There was, however, one class of boys which took the training and afterwards stuck to the navy. The author calls them "Gutter Snipe," and does not hesitate to say that he considered them very acceptable recruits (216).

Passing over the cruise of the *Saratoga* which, however, was a very interesting one, we come to Light-House duty. And here politics were encountered and a battle royal ensued. Our author recognized nothing but duty and the orders of his superiors. But politics were powerful. They commanded his commanders, and it became a question of "bend or break." He could not bend, and consequently he had to suffer. But strangely enough, his suffering was of great advantage to him. He was put on "waiting orders," but he could not wait. He found remunerative employment in which he learned a heap about steel which he never could have learned on Light-House duty or on board ship; and when a new administration came into power he was called upon to do duties where that knowledge was all important. One cannot help admiring the ability and versatility of a man, who being master of his profession as an officer of the navy, became through his own exertions an expert in steel, and afterwards in wood fibre. Not merely a theorist in these industries, but a practical expert, employed as such to create and operate works of great magnitude and value.

Again the scene changes. The author commands the *Yorktown* and carries her to Valparaiso. There has been trouble there. Relations between the

United States and Chile were strained. Newspaper accounts were often exaggerated and even untrue, and few, outside official circles, were able to form clear ideas on the situation. The author now clears the fog away from the subject. After reading the chapters devoted to Chilean affairs one feels that he knows all about the difficulty. He also feels that the commander of the *Yorktown* comported himself with dignity and firmness, and that it would have been hard to find another man so well suited to the situation.

In course of time the *Yorktown* was ordered to San Francisco, was refitted there, and sent to Port Townsend on her way to the North Pacific and Bering Sea to regulate the seal poachers. Our author is now in command of a squadron of eight ships. He did excellent work and practically put an end to poaching for that season, at least, and then returned to San Francisco. He had studied the seal question earnestly and long, and had reached a rather unique solution of it. What he desired was a settlement, and if his solution had been adopted "A settlement would have had to follow very shortly," no doubt. But, by the same reasoning the salmon of the Columbia might be declared a shoal of domestic animals, and the announcement might follow that it was "our intention to follow and protect them no matter where they went." Such an announcement in regard either to the seals or the salmon would be in effect a declaration of war against every nation who permitted its subjects to catch a salmon or kill a seal in the great Pacific Ocean.

The celebrations in connection with the opening of the Kiel Canal, which our author, now a Captain, U. S. N., attended in command of the *New York*, are graphically described, and his diagnosis of the character and abilities of the German Emperor is excellent.

In command of the *Indiana* he experienced some difficulty in getting his ship into the dry dock at Port Royal. His resolution when he was safely out at sea again "That if any more battle-ships were to be docked at Port Royal, some other captain would have to command," (398) is all that a reviewer needs to say on the subject.

The declaration of war against Spain; the blockade of Havana and the bombardment of San Juan are described in very few words. It appears that Sampson expected to find Cervera's fleet there, but was disappointed. The purpose of the bombardment, which has puzzled many people and some newspaper men, seems to have been practice only—a kind of baptism of fire for men who had never been in battle. (421.) One cannot help wondering, however, what the Spaniards thought about it after it was over.

The destruction of Cervera's fleet is well described, and in considerable detail. The description should settle much that is in dispute about that glorious day's work.

JAMES CHESTER,
Major of Arty. Retired.

A Memoir of the Life of John Codman Ropes.

As far as the writer knows, the Military Historical Society of Massachusetts is *sui generis* in the United States. It occupies a suite of rooms admirably adapted for its purpose on the third floor of the Cadet Armory in Boston. The corner tower room is fitted as a library and reading room, and a large adjoining room with many books in cases along its walls; shot, shell, flags, guns, etc., of historical interest placed here and there; and benches with a seating capacity of probably one hundred in the middle. These seats face a frame upon which

are hung large maps ; for be it noted that descriptions of battles and marches, discussions of strategical or tactical manoeuvres or other military matters are regarded as dealing with an exact science, and the organizer and ruling spirit of these monthly meetings is seeking the truth and the whole truth regarding these things, and the lecturer must be prepared for a cross-examination upon points not entirely clear by one with a trained legal mind and profound understanding of the principles underlying military science, combined with an exhaustive study of the subject discussed. A question is propounded here and there by this person, who sits generally upon the front seat among the audience. The visitor turns to see who it is that ventures to interrogate a participant in the actions he describes, and to even question the exactness of his statements. This little man with the large head and grey hair and beard has been a cripple since childhood, and never set a squadron in the field, nor dodged a whistling bullet, except in dreams. But he had dreams, and such vivid and exact ones. He had wandered in the lonely hours of the night over each and every battle-field of the Civil War and of Waterloo. He had conversed in spirit with Napoleon, Grant and Lee, and Sheridan and Stonewall Jackson, and all the corps and division and brigade commanders and regimental commanders who participated in the great events of these years. He did not disdain to hunt for facts among the company officers, and if the sergeants and corporals and privates had evidence to give he wanted it. In the writings of John Codman Ropes will be found as truthful a history of the events they describe and as thorough possibly as will ever be written. He died while engaged upon the Story of the Civil War, and with it but half completed.

It is fitting that a memoir of such an exceptional man should have been prepared by his associates and friends, and we have it in the handsomely gotten up volume before us. It is prefaced with a steel plate engraving of Mr. Ropes, which is followed by addresses delivered before the Massachusetts Historical Society in commemoration of Mr. Ropes, by Charles Francis Adams, Solomon Lincoln, John C. Gray, and George B. Chase ; an address by John Fiske, the historian ; a memorial address by A. J. C. Sowdon ; and the resolutions of the Bar Association of Boston, the 20th Regiment Association, the Massachusetts Historical Society, the Massachusetts Commandery of the Military Order of the Loyal Legion, and of the vestry of Trinity Church ; together with a bibliography of the writings of Mr. Ropes.

J. W. REILLY,
Lieut.-Col. Ordnance.

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Second Prize—Honorable Mention and \$50.

I.—The following Resolution of Council is published for the information of all concerned :

Resolved, That a Prize of a Gold Medal, together with \$100 and a Certificate of Life Membership, be offered annually by THE MILITARY SERVICE INSTITUTION OF THE UNITED STATES for the best essay on a military topic of current interest, the subject to be selected by the Executive Council, and \$50 to the first honorably mentioned essay. The Prizes will be awarded under the following conditions :

1. Competition to be open to all persons eligible to membership.
2. Each competitor shall send three copies of his Essay in a sealed envelope to reach the Secretary *on or before January 1, 1902*. The Essay must be strictly anonymous, but the author shall adopt some *nom de plume* and sign the same to the Essay, followed by a figure corresponding with the number of pages of MS.; a sealed envelope bearing the *nom de plume* on the outside, and enclosing full name and address, should accompany the Essay. This envelope to be opened in the presence of the Council after the decision of the Board of Award has been received.
3. The prize shall be awarded upon the recommendation of a Board consisting of three suitable persons chosen by the Executive Council, who will be requested to designate *the Essay deemed worthy of the prize*; and also in their order of merit those deserving of honorable mention.
- In determining the essay worthy of the prize, the Board will be requested to consider its professional excellence, usefulness and valuable originality, as of the first importance, and its literary merit as of the second importance. Should members of the Board determine that no essay is worthy of the prize, they may designate one or more essays simply as of honorable mention; in either case, they will be requested to designate one essay as first honorable mention. Should the Board deem proper, it may recommend neither prize nor honorable mention. Should it be so desired, the recommendation of individual members will be considered as confidential by the Council.
4. The successful Essay shall be published in the Journal of the Institution, and the Essays deemed worthy of honorable mention shall be read before the Institution, or published, at the discretion of the Council.
5. Essays must not exceed twenty thousand words, or fifty pages of the size and style of the JOURNAL (exclusive of tables).

II.—The Subject selected by the Council at a meeting held November 9, 1900, for the Prize Essay of 1901, is

"ARE DISAPPEARING GUNS ESSENTIAL TO THE
EFFICIENT DEFENSE OF OUR SEAPORTS?"

III.—The gentlemen chosen by the Council to constitute the Board of Award for the year 1901 are :

BYT. BRIG. GENERAL H. L. ABBOT, U. S. ARMY.
GENERAL WILLIAM A. BANCROFT, OF MASS.
COLONEL H. W. CLOSSON, U. S. ARMY.

GOVERNOR'S ISLAND, N. Y.

T. F. RODENBOUGH,

January 1, 1901.

Secretary.



The Seaman Prize.

The Secretary takes great pleasure in announcing that LOUIS L. SEAMAN, M. D., LL. B. (late Major-Surgeon, 1st U. S. Volunteer Engineers), has offered to found a prize in the MILITARY SERVICE INSTITUTION OF THE UNITED STATES, by contributing annually

One=hundred dollars in Gold

for the best Essay, subject to be named by himself, and to be approved by the Executive Council.

The subject proposed for 1901 will be:

"THE UTILIZATION OF NATIVE TROOPS IN OUR FOREIGN POSSESSIONS."

The competition is open to all Officers or ex-Officers in good standing, of the Regular or Volunteer Service of the U. S. Army.

Three copies of the Papers on the subject must be submitted to the Secretary of the Institution, to reach his office not later than Nov. 1, 1901. Each Essay must be limited to 15,000 words, exclusive of statistics.

All other conditions will apply as those connected with the Annual Military Service Institution Prize.

The gentlemen chosen by the Council to constitute the Board of Award for the year 1901, are:—

MAJOR GENERAL ARTHUR MACARTHUR, U. S. ARMY.

BRIG. GENERAL JAS. H. WILSON, U. S. ARMY.

MAJOR ALBERT L. MYER, 11th U. S. INFANTRY.

GOVERNOR'S ISLAND, N. Y.

May 1, 1901.

T. F. RODENBOUGH,

Bvt. Brig. Gen., U. S. A., Secretary.

Gold Medallists and others to whom Prizes have been awarded.

Institution Prizes.

(Initials preceding a name indicate: *G. M.*, Gold Medal; *F. H. M.*, First Honorable Mention.)

1880. *G. M.* **Gibbon, John**; Col. 7th U. S. Infantry, and Bvt. Brig.-Gen'l U. S. A.
F. H. M. **Wood, C. E. S.**; Lieut. 21st U. S. Infantry.
Subject.—"Our Indian Question."
1881. (No subject for competition.)
1882. *G. M.* **Lazelle, Henry M.**; Lieut.-Col. 23d U. S. Infantry (now Colonel retired).
F. H. M. **Greene, F. V.**; Capt. Corps of Engs., U. S. A.
Subject.—"The Important Improvements in the Art of War During the Past Twenty Years, and their Probable Effect on Future Military Operations."
1883. *G. M.* **Wagner, Arthur L.**; Lieut. 6th U. S. Infantry (now Lieut.-Col. Adj't. Gen'l's Dept. U. S. A.).
F. H. M. **Michaelis, O. E.**; Capt. Ordnance Dept. U. S. A.
Subject.—"The Military Necessities of the United States, and the Best Provisions for Meeting Them."
1884. *G. M.* **Price, Geo. F.**; Capt. 5th U. S. Cavalry.
F. H. M. **Dudley Edgar S.**; Lieut. 2d U. S. Artillery (now Major J. A. Gen'l's Dept., U. S. A.).
Subject.—"The Necessity for Closer Relations Between the Army and the People, and the Best Method to Accomplish the Result."
1885. *G. M.* **Woodhull, A. A.**; Bvt.-Lieut. Col., and Surgeon, U. S. A. (now Col. U. S. A. retired.)
F. H. M. **Dodge, R. I.**; Col. 11th U. S. Infantry.
Subject.—"The Enlisted Soldier."
1886. *G. M.* **Woodruff, Thos. M.**; Lieut. 5th U. S. Infantry.
F. H. M. **Schenck, A. D.**; Lieut. 2d U. S. Artillery (now Major Artillery Corps, U. S. A.).
Subject.—"Our Northern Frontier."
1887. *G. M.* **Sharpe, Alfred C.**; Lieut. 22d U. S. Infantry (now Major Adj't. Gen'l's Dept., U. S. A.).
F. H. M. **Sanger, Wm. Cary**; Q. M. 2d Brig. Staff, N. G. S. N. Y. (now Assistant Secretary of War.)
Subject.—"Organization and Training of a National Reserve for Military Service."
1888. (No Prize awarded.)
Subject.—"The Danger to the Country from Lack of Preparation for War."
1889. *G. M.* **Read, G. W.**; Lieut. 5th U. S. Cavalry (now Capt. 9th U. S. Cavalry).
F. H. M. **None.**
Subject.—"A Practical Scheme for Training the Regular Army in Field Duties for War."
1890. (No subject for competition.)
1891. *G. M.* **Reed, H. A.**; Lieut. 2d U. S. Artillery (now Capt. Art'y Corps U. S. A.).
F. H. M. **Pettit, J. S.**; Capt. 1st U. S. Infantry (now Major 1st U. S. Infantry).
Subject.—"The Terrain in its Relations to Military Operations."

1892. *G. M. Stuart, S. E.*; Lieut. Ordnance Dept., U. S. A.
F. H. M. None.
Subject.—"The Army Organization best Adapted to a Republican Form of Government, which will Ensure an Effective Force."
1893. *G. M. Scriven, G. P.*; Captain Signal Corps, U. S. A. (now Major Signal Corps, U. S. A.)
F. H. M. Hamilton, W. R.; Lieut. 5th U. S. Artillery (now Capt. Art'y Corps, U. S. A.)
Subject.—"The Nicaragua Canal in Its Military Aspects."
1894. *G. M. Ellis, E. A.*; Captain 8th U. S. Cavalry (now Major 13th U. S. Cavalry).
F. H. M. Steele, M. F.; Lieut. 8th U. S. Cavalry (now Capt. 6th U. S. Cavalry.)
Subject.—"Discipline; Its Importance to an Armed Force, and the Best Means of Promoting and Maintaining it in the United States Army."
1895. *G. M. Sharpe, H. G.*; Captain Subsistence Dept., U. S. A. (now Colonel Subsistence Dept., U. S. A.)
F. H. M. None.
Subject.—"The Art of Supplying Armies in the Field, as Exemplified During the Civil War."
1896. *G. M. Pettit, J. S.*; Captain 1st U. S. Infantry (now Major 1st U. S. Infantry).
F. H. M. Hill, R. G.; Lieut. 20th U. S. Infantry.
Subject.—"The Proper Military Instruction for our Officers. The Method to be Employed, its Scope, and Full Development."
1897. *G. M. Foote, S. M.*; Lieut. 4th U. S. Artillery (now Capt. Art'y Corps, U. S. A.)
F. H. M. Glassford, W. A.*; Capt. Signal Corps, U. S. A. (now Major Signal Corps, U. S. A.)
Subject.—"Based on the Present Conditions, and Past Experiences, How Should our Volunteer Armies be Raised, Organized, Trained, and Mobilized for Future Wars?"
1898. (No Essays received in competition)
Subject.—"Our Water Boundaries, and our Interior Waterways; How to Utilize and Defend them; Their Influence in Case of Invasion."
1899. *G. M. Britton, Edward E.*; Supernumerary Colonel N. G. N. Y.
F. H. M. Barry, Herbert*; Lieut. Squad. A. N. G. N. Y. (now Capt. Squadron A., N. G. S. N. Y.)
Subject.—"In What Way Can the National Guard be Modified, so as to Make it an Effective Reserve to the Regular Army in Both War and Peace."
1900. (No Gold Medal awarded.)
F. H. M. Allen, H. T.*; Capt. 6th U. S. Cavalry and Major 43d U. S. Volunteers.
Subject.—"The Organization of a Staff Best Adapted for the United States Army."

The Seaman Prize.

Names of those to whom the Seaman Prize (one hundred dollars in gold) has been awarded.

1900. *Munson, E. L.*; Captain Medical Department U. S. A.
Subject.—"The Ideal Ration for an Army in the Tropics."

*and Honorarium, \$50.

Our Exchanges.

Military.

- Armée et Marine*; regular issues for May and June, 1901; Paris.
Army and Navy Gazette; regular issues for May and June, 1901; London.
Army and Navy Journal; regular issues for May and June, 1901; New York.
El Boletín Militar; regular issues for May and June, 1901; City of Mexico.
International Revue über die Gesamten Armeen und Flotten for June, 1901; Dresden.
Journal of the United Service Institution of India for April, 1901; Simla, India.
Journal of the Royal United Service Institution for May and June, 1901; London.
Journal of the U. S. Artillery for May and June, 1901; Fort Monroe, Va.
Journal and Proceedings of the Royal Artillery Institution for March and April, 1901; Woolwich.
La Belgique Militaire; regular issues for May and June, 1901; Brussels.
La Revue Technique; regular issues for May and June, 1901; Paris.
Revue d'Artillerie for ; Paris.
Revue de L'Armée Belge for March and April, 1901; Liege.
Revue Militaire de L'Etranger for March and April, 1901; Paris.
Revue du Cercle Militaire; regular issues for May and June, 1901; Paris.
Rivista di Artiglieria e Genio for March and April, 1901; Rome, Italy.
Revista Militar for February, 1901; Rio de Janeiro, Brazil.
Revista del Club Militar for March, 1901; Buenos Ayres.
Seventh Regiment Gazette for May and June, 1901; New York.
United Service Gazette; regular issues for May and June, 1901; London.
United Service Magazine for May and June, 1901; London.

Naval.

- Boletín del Centro Naval* for February and March, 1901; Buenos Ayres.
Nautical Gazette; regular issues for May and June, 1901; New York.
Navy and Army Illustrated; regular issues for May and June, 1901; London.
Proceedings of the Naval Institute for June, 1901; Annapolis.
Revista Marítima Brasileira for March and April, 1901; Rio de Janeiro.

Miscellaneous.

- American Journal of Mathematics* for May and June, 1901; The Johns Hopkins Press; Baltimore.
American Monthly Review of Reviews for May and June, 1901; New York.
Book Reviews for May and June, 1901; Macmillan & Co., New York.

Bulletin of the American Geographical Society. No. 2. Vol. XXXIII, 1901; New York.

Current Literature for May and June, 1901; New York.

Cosmopolitan for May and June, 1901; New York.

Century Magazine for May and June, 1901; New York.

Journal of the Western Society of Engineers for April, 1901; Chicago.

La Ingenieria for March, 1901; Buenos Ayres.

Marine Review; regular issues for May and June, 1901; Cleveland.

Monthly Weather Review for May and June, 1901; Washington, D. C.

Medical Record; regular issues for May and June, 1901; New York.

Official Gazette of the U. S. Patent Office; regular issues for May and June, 1901; New York.

Pennsylvania Magazine of History and Biography for July, 1901; published by the Historical Society of Penna.; Philadelphia.

Proceedings of the American Society of Engineers for April and May, 1901; New York.

Political Science Quarterly for March, 1901; Ginn & Co., Boston.

Popular Science Monthly for May and June, 1900; New York.

Scientific American; regular issues for May and June, 1901; New York.

St. Nicholas for May and June, 1901.

Announcements.

The Military Service Institution desires a few copies of numbers 1, 2, 3, 4, 5 and 79 of the Journal.

Will the Members who have any of these numbers to dispose of, please communicate with the Secretary, Governor's Island, New York City.

A subscriber offers for sale a complete set of the Journal, M. S. I. (1880-1901). For further information address the Secretary of the Institution.

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